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BETTER FRUIT

JULY 1910

ORCHARD AND FARM, MARION COUNTY, WILLAMETTE VALLEY OREGON

PUBLISHED BY

BETTER FRUIT PUBLISHING COMPANY

HOOD RIVER, OREGON

PHEASANT & HUNTER BRAND PRUNES

Packed by

Willamette Valley Prune Association

Salem, Oregon

Awarded Gold Medals at St. Louis Exposition, 1895; Buffalo Exposition, 1901; Lewis and Clark Exposition, Portland, Oregon, 1905; Alaska-Yukon-Pacific Exposition, Seattle, Washington, 1909

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in the famous

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And Provide an Annuity for Old Age

We will plant and take care of the land during the growing period, turning over to you a bearing orchard, which will thereafter yield a competence for life. Easy terms

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Bitter Root Valley Irrigation Co.

Hamilton, Montana

First National Bank Building, Chicago

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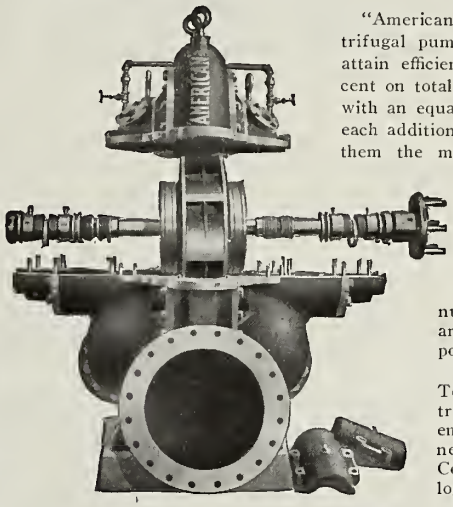

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Send for our circular "A Trip Through the Valley"

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Steinhardt & Kelly

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The largest and most extensive fruit concern in the world operating in all the fruit growing sections of the civilized globe

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STEINHARDT & KELLY Handle More

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CORRESPONDENCE WITH ASSOCIATIONS, UNIONS AND INDIVIDUAL GROWERS WILL BE GIVEN PERSONAL ATTENTION

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Are Quickly Sold at Fancy Prices by

Any Commission House in the United States

Therefore every *High Grade Commission Merchant* should have in his salesroom in season some of the very fanciest brilliant, glowing, red

Spitzenbergs

Grown and Packed by the

HOOD RIVER APPLE GROWERS' UNION

This brand of Apples is the acknowledged leader in the Apple World for quality, beauty and finish, and will give the most perfect satisfaction to the strictly high class trade in any city in this country.

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Look Good, Taste Better, Sell Best
Grade and Pack Guaranteed
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Apples, Peaches and Strawberries
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Branch houses: Great Falls, Missoula and Billings, Montana

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We have modern cold storage facilities essential for the handling of your products

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Superior facilities for handling

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OUR SPECIALTIES ARE APPLES AND PEARS

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APPLES FOR EXPORT

California, Oregon, Washington, Idaho and Florida fruits. Apples handled in all European markets. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; we **sell apples.** We make a specialty of handling cherries, apricots, peaches and all early fruits on the New York market. Correspondence solicited.

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Jobbers of

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AND APPLE PACKERS

Denver, Colorado

T. O'MALLEY CO.

COMMISSION MERCHANTS

Wholesale Fruits and Produce

We make a specialty in Fancy Apples, Pears and Strawberries

130 Front Street, Portland, Oregon

H. J. SHINN & CO.

The Old Reliable Fruit House

We occupy our own building, which is one block square and located on Northern Pacific tracks, Spokane, Washington.

Consignments solicited. We make weekly returns.

References:
Exchange National Bank
R. G. Dun & Co.

SPOKANE, WASHINGTON

E. P. Stacy & Sons

General Commission Merchants

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Wholesale Dealers in

FOREIGN AND DOMESTIC FRUITS

Branch Offices at Carrington, N. D.
Bismarck, N. D.; Valley City, N. D.
Head Office

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Grant McCann & Co.

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SPOKANE, WASHINGTON

We handle local or carload shipments of fruit and vegetables. Honest dealings and prompt returns.

References: Exchange National Bank, Spokane; Bradstreets Mercantile Agency.

MCEWEN & KOSKEY

Wholesale Fruit and Produce and General Commission Merchants

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Are solicited, all your shipments receiving our personal attention

Davenport Bros.

Portland, Oregon

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FRUIT & PRODUCE

Growers and Shippers of the Famous

Mosier Valley Fruits

YAKIMA COUNTY HORTICULTURAL UNION

North Yakima, Washington

C. R. Paddock, Manager

Apples, Pears, Peaches, Cherries, Plums, Prunes, Apricots, Grapes and Cantaloupes

Mixed carloads start about July 20. Straight carloads in season. Our fruit is the very best grade; pack guaranteed

We use Revised Economy Code

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WAUCOMA ABSTRACT AND INVESTMENT COMPANY

(Incorporated) Hood River, Oregon

Willamette Valley Fruit Lands

In Tracts to Suit

Rich soil Delightful climate
For descriptive literature write

OLMSTED LAND CO. Salem, Oregon

J. F. LITTOOY

CONSULTING HORTICULTURIST

Orchard director, orchard schemes examined, orchard plans submitted, orchard soils and sites selected, nurseries visited and stock selected, values examined for farm loans, purchasing agent for land and orchard investments, acts as power of attorney in selection of Carey Act lands.

MOUNTAIN HOME, IDAHO

"THE LAND WHERE THE RAIN AND SUNSHINE MEET"

LYLE, WASHINGTON

A YOUNG ORCHARD NEAR LYLE

A land wonderfully favored in climate, soil and environment. Apples and all tree fruits grow to perfection without irrigation. Lands for wheat raising, hay and dairy farms. Also for small fruits.

FOR BOOKLET AND FURTHER INFORMATION ADDRESS

LYLE COMMERCIAL CLUB

Lyle, Washington

Lyle Fruit Lands

Where "The Rain and Sunshine Meet"

First Prize at the National Apple Show

Across the Columbia from the famous Hood River, Oregon, orchards. Apples, pears, peaches, without irrigation. Unsurpassed soil, climate and scenery. Also wheat land and stock ranches. Write or call on

MORGINSON, DAYTON & CLARK

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A LYLE APPLE TREE IN BLOSSOM

THE BANNER APPLE BELT OF THE WORLD

The WHITE SALMON VALLEY, WASHINGTON

ITS LANDS offer safe and profitable investment; none have invested in these lands without profit; the upward tend must continue, as good apple land is limited; ten acres of bearing apples is a fortune; a fruit failure in this section is unknown. We make a specialty of orchard sites and can locate you right. Write for list.

F. L. GORDON & CO.

WHITE SALMON, WASHINGTON

Arcadia Orchards Company–Irrigated Orchards

The Land of Sunshine *The Center of the Best Fruit Belt in Washington*

Only twenty-two miles from Spokane. Excellent transportation facilities, ideal climate, irrigation by gravity

Our Plan: We plant, cultivate, irrigate and care for your orchard for four years, and pay your taxes for five years. You may remain at your present occupation while we bring your orchard to bearing. No charge for water. The largest private irrigation project in the West. Buy now, before a further increase in values. Easy terms. Send for literature.

ARCADIA ORCHARDS COMPANY **Hyde Building, SPOKANE, WASHINGTON**

$1000 PER ACRE NET $1000

MOSIER APPLES AT HOOD RIVER FAIR

This is not an unusual profit for producing apple orchards in Oregon. It is a perfectly possible profit for any man of persistence and common sense who will select land in a proven apple district in Oregon and develop it properly. If you are at all interested in fruit growing we advise you to investigate the Mosier Valley. This valley adjoins the famous Hood River Valley and is properly a part of it so far as the character of the soil and the quality of the fruit produced is concerned. We claim that the apples produced in Mosier Valley are second to none and that there is no section anywhere which offers the fruit grower a greater opportunity. Land in the Mosier Valley can be obtained for very low prices, and can be cleared with comparatively little effort. These lands can be made to increase in value from 100 to 500 per cent in two years by clearing and planting trees. We invite the most careful and critical inspection of Mosier Valley, confident of the outcome. *For full particulars about this Valley address*

SECRETARY MOSIER VALLEY COMMERCIAL CLUB

MOSIER, OREGON

THE LAST TIME

MOSIER APPLES

Were shown at the Hood River Fair they took two out of three of the best prizes.

Last year Mosier apples and Hood River apples sold to the same buyers and for the same price as Hood River apples.

Mosier apple land may be had at a more reasonable figure than land in any other **proven** apple district in the Northwest.

FOR PRICES, GENERAL INFORMATION AND BOOKLET ADDRESS OR SEE

D. D. HAIL, REAL ESTATE, MOSIER, OREGON

Okanogan Fruit Lands

We have recently purchased three thousand acres of "allotted" Indian land in the

SIN-LA-HE-KIN VALLEY

all of which produces the finest flavored and highest colored apples grown. This land was allotted in 1885 to the Moses Indians in tracts of 640 to 2,200 acres, and was selected on account of the mildness of the winters, and will grow any fruit or vegetable grown north of California.

The elevation of this land is 1,200 to 1,700 feet, and 250 to 300 days of sunshine guarantees the high color of the fruit grown in this beautiful valley. Seventy-five per cent of every tract is ready for cultivation.

We have just finished planting sixty-five acres, and wish to continue the development of this property, and will for this reason sell thirty ten-acre tracts for $125 per acre, this price to include a perpetual water right for the complete irrigation of the purchased land. Payments to be made half down and the balance in one or two years, with eight per cent interest on deferred payments.

IF INTERESTED WRITE TO

T. ERNEST OATES
561 East Ankeny Street
PORTLAND, OREGON

OR

GEO. J. HURLEY
LOOMIS, WASHINGTON

APPLES PLUMS PEARS PEACHES PRUNES

JONATHANS NEWTOWNS

A Promise of Good Returns

The LAND OF OPPORTUNITY

LOCATED across the Columbia River from Hood River, Oregon, the White Salmon Valley offers the greatest opportunities of any land on earth to fruit growers. Where apples, cherries, pears, peaches, prunes and strawberries grow to perfection. A few dollars invested in fruit land today will return to you in a very few years sixty-fold. The soil, climate, water and scenery are unsurpassed by that of any country. Build a home where you can enjoy peace and plenty the remainder of your life.

We have some bargains in orchard and general farm lands in and near White Salmon, also large and small bodies of timber land, cheap.

WRITE US FOR DESCRIPTIVE MATTER AND PRICES

Estes Realty & Investment Co.

WHITE SALMON, WASHINGTON

SPITZENBERGS WINESAPS

BERRIES CHERRIES STRAWBERRIES NUTS

THIS IS THE TIME

TO BUY HOOD RIVER LAND

THERE is a constant and merited advance in values, so buy now and profit thereby. Complete information on over **350 different places.** Some one of them will suit you and your purse. Name your wish—we'll name the place. Correspondence solicited.

THE L-P LAND COMPANY

12 Smith Block Telephone 259 Hood River, Oregon

SPRINGVILLE

Is to Utah

What Palisade is to Colorado

The Natural Fruit Center

BUY CHEAP LANDS NOW

ROE A. DEAL Springville

UPPER METHOW VALLEY

"WHERE LIFE IS WORTH WHILE"

First class irrigated apple lands for sale at $100.00 per acre and up

Apply for particulars to

Methow Investment & Agency Co.

Real Estate Agents Box 51, Winthrop, Washington

A CHANCE OF A LIFETIME TO SECURE TEN ACRES OF

CHOICE APPLE LAND

This tract is located only *four miles* from *Hood River* across the Columbia River at Underwood, Washington, in the famous White Salmon Valley with a grand view of the Columbia River and Hood River Valley. *No waste land.* All rich, deep soil. Good natural air and water drainage. *No frost*

AT ONLY $100 PER ACRE

Address C. R. GREISEN, Hood River, Oregon

Three Hood River Bargains

FIRST

10 acres, all in orchard; 7 acres in bearing, nice crop this year; 2½ acres in strawberries between the young trees; trees are all standard commercial varieties, Spitzenberg, Newtowns and Jonathans; small box house, small barn, three inches of water. On main county road ¼ mile from railroad station, 1 mile from school, church and stores, 7½ miles from Hood River. This is absolutely the best bargain in its class in the valley.

Price $950 an Acre

SECOND

20 acres of the finest soil in the famous "Willow Flat district," 1 mile from railroad station and store; all under ditch and on the main county road; surrounded by land valued at from $400 to $1,500 an acre. If you want to raise the finest Newtowns ever grown, this is the place. Price $200 an acre for the 20 or $2,500 for the best 10.

THIRD

AN IDEAL SPOT FOR A SUMMER HOME

46 acres in the Mount Hood district, 1½ miles from railroad station, school and store. This is one of the prettiest places for a home in the valley, and is a bargain from any point of view. It must be seen to be appreciated. Price $3,000; $1,000 cash, balance 5 years at 7 per cent.

WE HAVE A GREAT MANY OTHERS IN ALL PARTS OF THE VALLEY AND CAN SUPPLY YOUR NEEDS

SHELLEY & SHELLEY

NEXT TO MOUNT HOOD HOTEL BOX 162, HOOD RIVER, OREGON

PIONEERING IS NOT PROFITABLE

Hood River Valley had not been discovered to the world when Mr. Carnegie uttered the final word. Now, in a country where a homestead is worth from $16,000 to $32,000; where land can be had for $100 per acre that in five years is worth $1,000 an acre, and pays usury on that sum, pioneering is **profitable.**

In the Deadpoint Improvement Company 300 acres we commend to you an opportunity for pioneering profitable far in excess of any claim we make. It is surveyed and laid off in ten-acre lots. Its scenic location is magnificent. Sixty dollars per acre is the price and the terms are good.

A few years ago Upper Valley land wasn't considered worth homesteading; this spring it sold as high as $200 per acre, unimproved. This Deadpoint property has the same deep red soil and its own water; it is six miles nearer Hood River and within two miles of a station. This isn't wheat land—don't summer fallow.

JOHN LELAND HENDERSON, Incorporated, Hood River, Oregon

LOS MOLINOS IRRIGATED LANDS

Secure a self-supporting home **that will pay for itself in three years,** in a charming California valley. With our ten months' growing season you can put **two summers into one!**

Our fruit and vegetables are shipped East with big profits, giving **double results** obtained elsewhere.

We cut alfalfa **six times each year,** netting $60.00 **per acre.**

Our lands are now selling at $150.00 per acre, with perpetual water right for irrigation.

No damaging frosts! Cheap river and rail transportation!

Buy now and take advantage of low prices. This is an **unusual opportunity to become independent.**

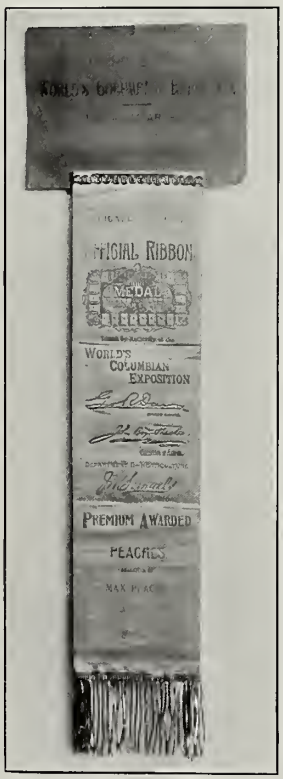
WRITE US FOR FREE BOOKLET

LOS MOLINOS LAND COMPANY

LOS MOLINOS, TEHAMA COUNTY, CALIFORNIA

ASHLAND, OREGON

HAS TAKEN THE GOLD MEDAL ON HER
PEACHES EVERY TIME SHE EXHIBITED



Ashland

in the southern end of the

Rogue River Valley in Southern Oregon

holds the highest award for carload exhibit of Yellow Newtown Pippins at National Apple Show

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For information covering the wonderful scenic, soil and climatic conditions, write

Publicity Department of the Ashland Commercial Club, Ashland, Oregon

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ILLUSTRATED BOOKLET SENT FREE

White Salmon Valley

WASHINGTON

Across the river from Hood River Valley, Oregon in the Banner Apple Belt of the World

The WHITE SALMON VALLEY today presents OPPORTUNITIES FOR INVESTMENT beyond that of any other FRUIT REGION in the Northwest. It is the north half of a LARGE VALLEY lying between Mount Adams on the north and Mount Hood on the south. The mighty Columbia flows between and divides this valley. From the Columbia River to Mount Hood forms the Hood River Valley, and from the Columbia River to Mount Adams forms the White Salmon Valley. Both these mountains are snowclad all the year and influence the climatic conditions. This, together with a volcanic ash soil, produces apples that are superior to all others in the world in FLAVOR, SIZE, COLOR, and, most important of all, KEEPING AND SHIPPING QUALITIES.

Ninety per cent of the fruit grown in this valley is exported, bringing the highest market prices.

THE CLIMATE of this region i sideal. It is located in the midst of the CASCADES, with a pure mountain air and free from excessive rains or drouth. The snow-covered peaks at either end of the valley temper the heat of summer and make the summer nights cool and invigorating. The winters are as a rule mild and short. The scenery is as fine as may be found anywhere on the continent.

The valley has been held back heretofore through lack of railroad transportation, but the SPOKANE, PORTLAND & SEATTLE RAILROAD, part of the Hill system, now in operation, gives this valley the best of shipping facilities.

NOW IS THE TIME TO SECURE A CHOICE ORCHARD TRACT AT A LOW FIGURE. Write today for particulars of this wonderful valley to the

WHITE SALMON VALLEY DEVELOPMENT LEAGUE **White Salmon, Washington**

White Salmon Valley Lands

Orchard, Farm and Timber Tracts

Situated in the famous White Salmon Valley, directly opposite the Hood River Valley, seventy-five miles east of Portland, twenty-five miles east of the Cascade Divide, on the beautiful Columbia River. Half way between Mount Hood on the south and Mount Adams on the North.

One of the few districts where good orchard lands may still be bought at reasonable prices.

We list no land that we have not personally examined, therefore guarantee every tract as represented, also furnish abstract up to date with every sale.

In the following list are some of the most desirable tracts for sale in this district.

526—6 acres, located in the city limits of White Salmon; an ideal site with a fine view; 3¼ acres all cleared and set to fruit trees, with strawberries between the rows; deep red shot soil; all good fruit land except one-half acre, which would make a desirable building site. Price $3,600; half cash, balance 2 years 8 per cent.

524—10 acres, 10 minutes' walk from the post office; outside of the city limits of White Salmon; nearly level, but enough slope for good drainage; spring water most of the year; all fenced. This is one of the most desirable tracts in this vicinity for one wishing a home practically in town. Similar land to this located within 3 miles of White Salmon averages over $300 net per acre from strawberries. This is a bargain at $325 per acre; half cash, balance 3 years 8 per cent.

528A—10 acres, first-class fruit land; red shot soil, spring water; on county road, 1 mile from post office. Only $75 per acre; half cash, balance 3 years at 8 per cent.

550—20 acres, 2 miles from White Salmon; 700 Spitzenberg and Yellow Newtowns in orchard; 10 acres under plow; 3 acres in strawberries, bearing this season; beautiful view of Mount Hood and Columbia River; *no waste land;* house and well on place. Ranch adjoining sold for $20,000. For quick sale, price only $6,000.

528D—10 acres, in well-known district; 1 mile from post office, 12 miles from White Salmon; spring water. A snap for only $50 per acre; easy terms.

528E—10, 20 or 40 acres of the Fruitdale Ranch will be sold at only $50 per acre, cash. Land is red shot soil; has flowing spring water; fine view of Mount Adams when cleared. Only 8 miles from Husum, on county road; 12 miles from White Salmon.

528B—20 acres, with flowing spring water; red shot soil; on county road; good apple land. For a quick sale, price only $65 an acre; easy terms.

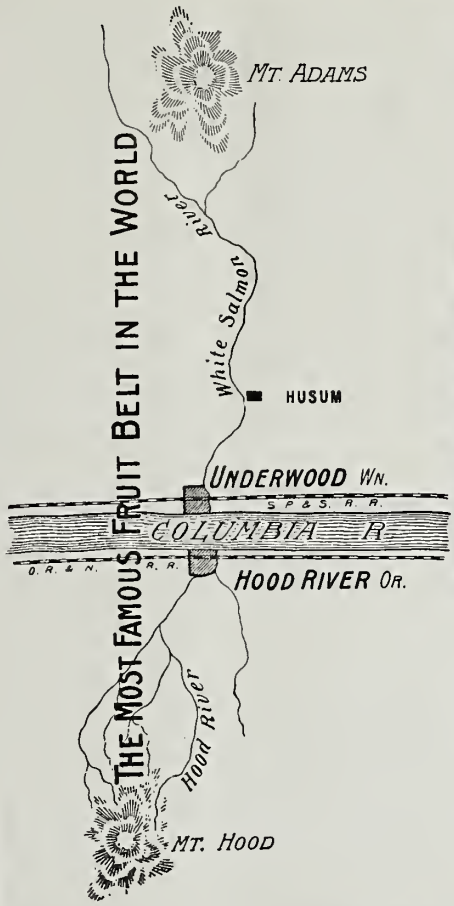
528C—40 acres, with house and large barn, tool house; 1 acre in 2-year-old Spitzenberg and Yellow Newtown trees; 2 acres under plow; red shot soil; flowing spring water; 25 acres orchard land, 15 acres hay land; on county road. One of the best tracts on our list. A bargain for only $2,750 cash.

W34—80 acres, 45 of which is good apple land, 35 rolling deep red shot soil; elevation 1,400 feet; 50 acres easily cleared; spring water; 2½ miles from Husum; 8 miles from railroad station on North Bank Railroad. A snap at $25 per acre, cash.

Space does not allow publishing our entire list, ranging in price from $25 an acre up; the above numbers are a few of our best values this month. Would advise any one contemplating purchasing a tract of orchard land to do so before prices advance.

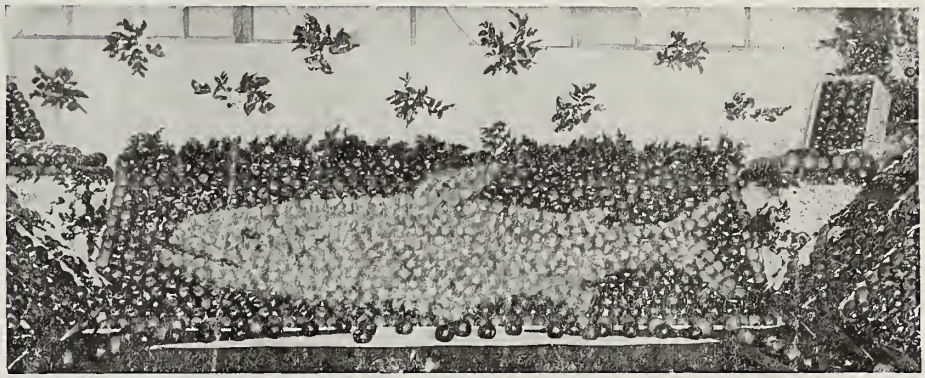
THE WHITE SALMON REALTY CO.

H. W. DAY White Salmon, Washington H. G. DAY



UNDERWOOD

The Gateway to the White Salmon Valley



WHITE SALMON VALLEY FRUIT GROWERS' UNION OF UNDERWOOD, WASHINGTON, WON THREE IMPORTANT PREMIUMS AT SPOKANE

First on Best Four-Tier Newtowns, Second on Best Ten Boxes Newtowns, First on Best Pack

Twenty minutes from Hood River by ferry. Two hours by rail, seven hours by boat from Portland. Twenty-five thousand acres first-class fruit land tributary to this point. Has a strong Apple Growers' Union, which controls the output of the valley. Same fruit, same markets, same prices as Hood River has. Fine class of people coming in—a community of *homes*. Land close in to river and railroad $40.00 to $150.00 an acre *now*, but advancing rapidly.

Write, phone or call on

W. F. CASH UNDERWOOD WASHINGTON

Newtowns Yield $1800 per Acre

James Lacey on an acre of Newtowns marketed 791 boxes of first grade apples, which brought $1,698.55. He has left fifty boxes of seconds, which will sell for about $1.50 per box, and bring the total gross sales from one acre of Newtowns up to $1,800. The returns from his three and a half acres of bearing apples, all kinds, are $3,801.76 for first grade apples alone, and second grades will fully pay for the labor of taking care of the crop. This makes an average of over $1,000 an acre profit.

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BETTER FRUIT

A MONTHLY ILLUSTRATED MAGAZINE PUBLISHED IN THE INTEREST OF MODERN AND PROGRESSIVE FRUIT GROWING AND MARKETING

PRUNE INDUSTRY—ITS COMMERCIAL IMPORTANCE

BY H. S. GILE, MANAGER WILLAMETTE VALLEY PRUNE ASSOCIATION, SALEM, OREGON

THE QUESTION is often asked, whether it is not a fact that the consumption of prunes is on the decrease, and if in the near future the ever popular Oregon apple will not become so abundant that it will be the great fruit of the common consumer and force the prune out of business?

The time is easily within the recollection of the majority of the readers of this page when all the prunes consumed in the United States were imported prunes. The common kind, or the sort for ordinary use, such as the farm, the camp, the boarding house and the like, were brought over to this country in great casks. On arrival at the village store the end was knocked in and the prunes were dug out with pick or bar, a dirty mess, and sold cheap, the storekeeper vieing with his competitor as to who could sell the largest bag of prunes for a dollar. These were Turkish prunes. The fancy or French variety were looked upon more as a confection and were used in the nature of a luxury. This sort reached us in bottles, cans, or fancy boxes, and were not, nor are they now, sold cheap.

In order that a proper conception may be had as to the quantity imported, and to show the decline of the imports as well as to show the quantity exported, and, furthermore, to give an accurate idea of the steady growth of the demand abroad for American grown prunes (plums), there is appended a table of exports and imports covering the years from 1898 to 1908 inclusive, as follows:

	Imports	*Exports*
1898	600,000	5,615,000
1899	443,000	25,922,000
1900	746,000	10,021,000
1901	522,000	23,359,000
1902	634,000	66,385,000
1903	494,000	73,146,000
1904	671,000	54,994,000
1905	497,000	24,869,000
1906	323,000	44,400,000
1907	335,000	28,148,000
1908	296,000	22,602,000

The energetic Californians found out a good many years ago that all the gold was not in the streams or in the mountains, and with the tremendous development of the fruit industry of the Golden State it was soon demonstrated that the Santa Clara Valley was a great producer of the yellow metal through the growing of fruit, and among other kinds prunes were introduced extensively. This fruit being so much superior to the Turkish variety, the latter was speedily driven out of our home market, and the California product also gradually reduced the imports of the fancy French product, though it is quite possible there are still a few consumers who continue to relish best anything which bears a foreign label. And we have no quarrel with this class of consumers if they prefer to eat the imported French prunes out of bottles, though in all probability that same French prune was grown in Oregon or California, had been sold to France, shipped over there, prepared under the fancy French process, and sold and shipped back to the United States. There is no deception in this transaction, for the prune in the first place is an American grown French prune—it has no other name—and it is at least as good as any grown in France.

From the Santa Clara Valley the industry soon spread to other districts, until it is now an open question as to whether the northern part of the state will not shortly be the greatest producer of California French prunes. But the Santa Clara Valley and the State of California were not always to have a monopoly of the prune producing business of the United States. Conditions have developed in recent years which at least raise the question in the minds of the thoughtful as to whether the entire prune growing area of the United States may not be gradually moving still further to the north.

It was not until about 1892 that the prune of the Northwest, now known as the "Oregon" prune, began to be produced in quantities sufficient to attract the attention of the commercial world, and this writer recalls some interesting personal experiences in the early days of the Oregon prune production when in his enthusiasm for the new product of Oregon he made several trips to the East, and had he been a third rate book agent could scarcely have met a more indifferent reception at the hands of the wholesale merchants of the East. They did not want a new or a second variety prune. Their position was logical enough and was about as follows: "Why stock another variety of prune when consumers everywhere like the California prune; when the name 'California' is in the

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H. S. GILE
Manager Willamette Valley Prune Association
Salem, Oregon

mouth of every consumer? Oregon! Who knows anything about Oregon?" And more than all else, objection was raised in a most positive manner to the fruit itself as being coarse, tough and sour. The Oregon prune industry was then an infant, but it has made a sturdy growth because of the storm of opposition which it has weathered. The present up-to-date method of preparing the Oregon prune for market has entirely overcome these early objections, and we have yet scarcely touched the rim of an industry which is capable of mighty expansion. The Oregon prune is becoming more and more each succeeding year a world-wide favorite fruit. Its delicate, tart flavor, or taste, and its large size (two of the early stock objections to it) are the very points upon which it has won its place.

We wish to introduce just here the following table showing the production of California prunes for a number of years, beginning with 1890, and to this table you may add a conservative estimate for last year's crop of 150,000,000 pounds. If it is desired to arrive at the total production of the Pacific States covering these several years (there being no statistics available for the Northwest) an average of about 20,000,000 pounds annually since about 1893 will serve to help the reader to arrive at a very nearly correct total production of the Pacific Coast.

California's production for 1890 was 16,000,000 pounds, a gradual and steady increase being shown up to 1900 with 174,000,000 pounds.

1901	81,000,000
1902	197,000,000
1903	165,000,000
1904	135,000,000
1905	62,500,000
1906	185,000,000
1907	106,000,000
1908	57,000,000

The smaller figures in the above total yield show an occasional short crop season.

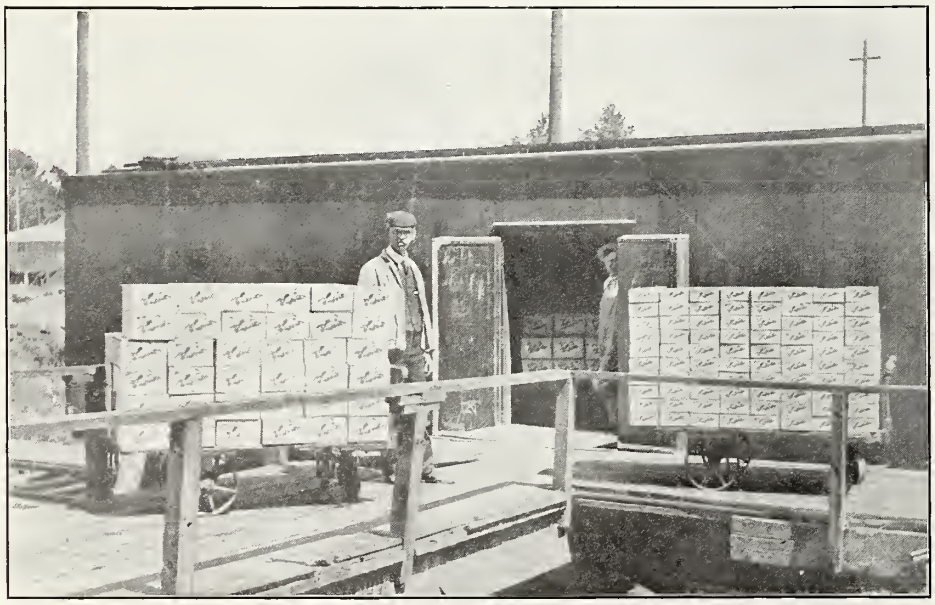
PRUNE ORCHARD AND DRIERS OF GILE & CO. OF SALEM, AT NEWBERG, OREGON

A study of the above figures and a mental calculation as to the increase of our population, naturally and by immigration, will answer my opening question to the effect that the consumption of American grown prunes is increasing very rapidly, and especially so in foreign countries, whenever our prices are not beyond their reach.

While this is true, at the present time no considerable effort is being made looking toward the future increase of this product. In the Willamette Valley there is yet plenty of moderately cheap land well adapted to the growing of this fine fruit, and to the mind of this writer some of the thousands of acres now being planted to apples might to better advantage be set to Oregon prunes.

Most of the Oregon prune acreage has now about reached the zenith of its producing power and no considerable amount of new planting has been done in the past several years. Oregon prunes should be planted on moderately high, rolling, red soil. With such a location, carefully selected, failure of crop can be almost entirely eliminated. Prune growing requires less technical horticultural knowledge than does the culture of almost any other fruit, and its sale when ready for market at a reasonable profit is a simple process. A considerable number of responsible packers have become firmly established in the Northwest with well equipped packing plants and well established selling forces, so that the only question with the grower is when to sell. Buyers are frequently in the field before the blossom has fallen from the trees. But, on the other hand, the fruit may be held by the grower indefinitely if he so desires. The prune grower is in absolute control of the situation and is under no necessity of immediately trusting his year's production to commission merchants or others located a long distance from his orchard and upon whom he must depend for the returns for his labor—a system which is generally employed in the disposition of the fresh fruit product of all varieties.

To this writer, therefore, it is evident that there is no serious danger that there will be for many years to come a condition of oversupply of American grown prunes. Furthermore, the writer believes that the orchardist who pins his faith to Oregon prunes and is not turned aside by extravagant tales of excessive profits in other fields, will in the future be easily able to make a favorable comparison of net balance sheets covering a half score of seasons with similar balance sheets of any other variety of fruit.

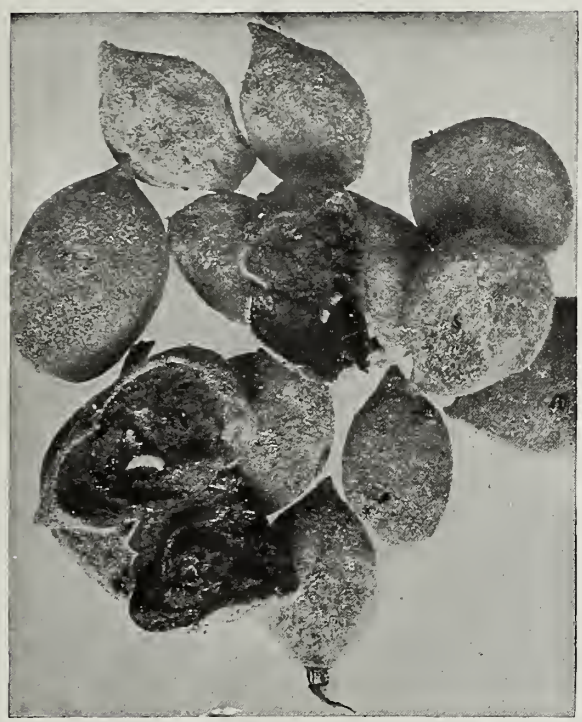


LOADING A CAR WITH FANCY PACKED PHEASANT BRAND PRUNES
Willamette Valley Prune Association, Salem, Oregon

BROWN ROT AND PLUM CURCULIO ON PEACHES

BY W. M. SCOTT, BUREAU OF PLANT INDUSTRY, AND A. L. QUAINTANCE, BUREAU OF ENTOMOLOGY, WASHINGTON, D. C.

THE two most important troubles of the fruit of the peach and other stone fruits are the so-called "brown rot" (Sclerotinia fructigenia (P.) Schrot.) and the plum curculio (Conotrachelus nenuphar Herbst). The brown rot is a fungous disease of the flowers, twigs and fruit, but is especially destructive to the latter as it approaches maturity. Under weather conditions favorable to the fungus, from one-half to three-fourths of the crop, or even the entire crop, may be destroyed within a few days. The marketed fruit, moreover, rarely reaches its destination in good condition and is often a disappointment to the grower as well as to the consumer. This destructive disease is well known to peach growers, especially in the Southern States, and requires but little in the way of description. Although young green fruit may become infected, it is the ripening fruit which suffers most. The disease first appears as a small brown spot, which rapidly enlarges, involving in a few days the entire fruit. On the surface of the diseased spots minute tufts of spore-bearing threads appear, giving to the fruit a grayish, moldy appearance.



THE PLUM CURCULIO AND ITS WORK
Young peaches infested with larvæ, from ground under tree
Reduced about one-half.

The plum curculio, in the course of its feeding and egg laying, punctures the fruit, and is often so abundant that not a single fruit escapes injury. The punctures form a nidus for brown rot spores, greatly favoring infection. Larvae of the curculio, hatching from the eggs placed beneath the skin of the peach, make their way to the pit, and by their injury cause much of the young fruit to drop. Fruit infested later in the season may ripen prematurely and fall or be badly misshapen. Worminess of peaches in the East is entirely due to the plum curculio, and the injuries of this insect cause, in the aggregate, a loss each year to fruit growers of many thousands of dollars. As the curculio by its punctures opens the way of brown rot infection of peaches, plums, etc., its control becomes doubly inmportant.

While the curculio is not of itself the cause of brown rot, its work very greatly favors the disease. Furthermore, it is practically certain that the curculio distributes the spores of the fungus, and in the course of its feeding and egg laying actually infects the fruit with the fungus.

As is well known, the foliage of the peach and other stone fruits is especially sensitive to sprays, such as paris green and bordeaux mixture. This has largely prevented the use of bordeaux mixture and other copper compounds for the control of peach diseases. While it has been known for several years that arsenate of lead could be used in the treatment for curculio, some injury has resulted, and on account of the well known sensitiveness of peach foliage entomologists have been cautious about recommending its use. The combination treatment for fungous diseases and insect enemies so successful in the treatment of the apple, grape, etc., has, therefore, not been possible on the peach.

PEACH BORER MOTHS
Female above, male below. Enlarged twice.

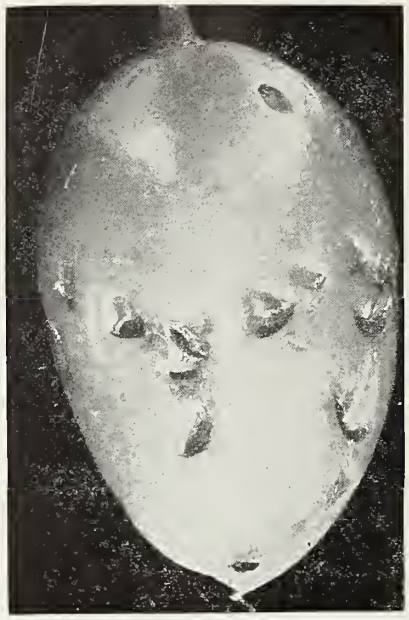
The development of the self-boiled lime-sulphur mixture, however, as a fungicide has made possible the control of the brown rot and some other peach diseases. The experiments made by the bureau of plant industry with the self-boiled lime-sulphur mixture on the peach, covering three years—from 1907 to 1909—have shown conclusively that when properly made it is perfectly harmless to the foliage, fruit, and tender growth of the peach, and that it will satisfactorily

FANCY DRIED PRUNES, PACKED BY GILE & CO., SALEM, OREGON

control brown rot, peach scab, and other fungous diseases.

In experiments conducted during the past season it was found that the arsenate of lead could be combined with the self-boiled lime-sulphur mixture for spraying peaches, and that this insecticide was apparently less injurious in the combination than when used alone, and that the combination was entirely successful in controlling the scab, brown rot and curculio. The addition of arsenate of lead, as shown by these and other experiments, has been practically without injurious effects where not more than two applications have been made. Three applications, however, of an arsenate of lead spray are likely to cause shot-holing of the leaves and an excessive reddening of the fruit, and under certain weather conditions such symptoms may appear as the result of only two applications of the poison, though ordinarily not to an injurious extent. The great benefits to be derived from spraying, it is believed, will much more than offset any possible slight injury.

In experiments conducted in the Hale orchard at Fort Valley, Georgia, during 1909 by the Department of Agriculture the practicability of the control of peach scab, brown rot and the curculio was thoroughly demonstrated. Thus a block of 1,100 Elberta trees was sprayed, first, with arsenate of lead at the rate of two pounds to fifty gallons of water at the time the calyces or shucks were shedding; second, with two pounds of arsenate of lead in self-boiled lime-sulphur mixture (8-8-50) three weeks later; third, with self-boiled lime-sulphur mixture alone a month later; and fourth, with self-boiled lime-sulphur mixture a month before the ripening period of the fruit. At picking time 95.5 per cent of the fruit from the sprayed block was free from brown rot, 93.5 per cent free from scab, and 72.5 per cent free from the curculio. On the unsprayed block only 37 per cent of the fruit was free from brown rot, 1 per cent free from scab, and 2½ per cent free from curculio injury. In packing the fruit for market it was found that the amount of merchantable fruit on the sprayed block was ten times as great as from the unsprayed block containing the same number of trees.



PLUM CURCULIO AND ITS WORK
Young plum, showing crescent-shaped egg-laying punctures. Enlarged four times.

PLUM CURCULIO AND ITS WORK
Adult, or beetle, on a young peach. Enlarged four times.

THE PEACH BORER AND ITS WORK
The "borer" and its cocoon at root-crown of two-year-old peach tree.

PEACH BORER AND ITS WORK
Exudation of gum at base of infested tree.

On a block of Waddell trees sprayed with the self-boiled lime-sulphur mixture alone, one month after the falling of the petals and again one month before the fruit ripened, the results were not quite so good, owing to curculio infestation; but the yield of merchantable fruit was, nevertheless, 100 per cent more than on a similar block of unsprayed trees of the same variety.

From these results and those of previous experiments we may conclude that the peach grower now has at his command a reasonably safe and thoroughly effective remedy for the peach scab, brown rot and curculio. By carefully following the instructions given below he should be able effectively to prevent these troubles at a small cost.

The sprays to be employed are the self-boiled lime-sulphur mixture and arsenate of lead. The arsenical is added to the lime-sulphur mixture, permitting the treatment of both brown rot and the plum curculio at one and the same time.

The self-boiled lime-sulphur mixture is composed of eight pounds of fresh stone lime and eight pounds of sulphur (either flowers or flour may be used) to fifty gallons of water. This appears to be about the correct strength, although in mild cases of scab and brown rot a weaker mixture, containing six pounds of each ingredient to fifty gallons of water, may be used with satisfactory results. The mixture can best be prepared in rather large quantities—say, enough for two hundred gallons at a time, making the formula thirty-two pounds of lime and thirty-two pounds of

sulphur, to be cooked with a small quantity of water (eight or ten gallons) and then diluted to two hundred gallons.

The lime should be placed in a barrel and enough water poured on to almost cover it. As soon as the lime begins to slake the sulphur should be added, after first running it through a sieve to break up the lumps. The mixture should be constantly stirred and more water added as needed to form a thick paste at first and then gradually a thin paste. The lime will supply enough heat to boil the mixture several minutes. As soon as it is well slaked water should be added to cool the mixture and prevent further cooking. It is then ready to be strained into the spray tank, diluted and applied. The stage at which cold water should be poured on to stop the cooking varies with different limes. Some limes are so sluggish in slaking that it is difficult to obtain enough heat from them to cook the mixture at all, while other limes become intensely hot on slaking and care must be taken not to allow the boiling to proceed too far. If the mixture is allowed to remain hot fifteen or twenty minutes after the slaking is completed, the sulphur gradually goes into solution, combining with the lime to form sulphids, which are injurious to peach foliage. It is therefore important, especially with hot lime, to cool the mixture quickly by adding a few buckets of water as soon as the lumps of lime have slaked down. The intense heat, violent boiling and constant stirring result in a uniform mixture of finely divided sulphur and lime, with only a very small percentage of the sulphur in solution.

PLUM CURCULIO LARVA AND ITS WORK IN A RIPE PEACH.
Natural size.

WORK OF PLUM CURCULIO
Gum exudation from punctures in green peaches.
Reduced about one-half.

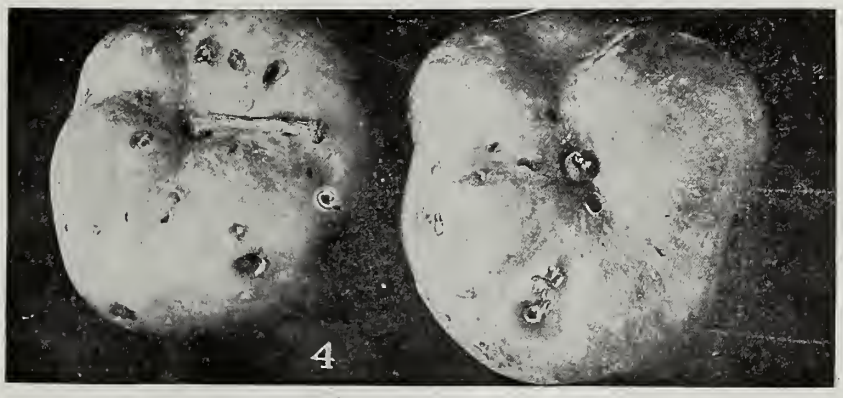
It should be strained to take out the coarse particles of lime, but the sulphur should be carefully worked through the strainer.

Arsenate of lead comes on the market in a thick, putty-like paste, and must be worked free in water before addition to the lime-sulphur mixture. There are several brands upon the market and the grower should be careful to purchase from reliable firms. The addition of arsenate of lead to the self-boiled lime-sulphur mixture will cause a decided change in color, but without injuriously affecting the value of the spray. Arsenate of lead is used at the rate of two pounds to each fifty gallons of water or lime-sulphur mixture.

The amount of poison required for each spray tank of mixture may be weighed out into a bucket, thinned with water and poured through a strainer into the spray tank. In extensive operations, however, it is much more convenient to prepare a stock mixture in advance. Place one hundred pounds of the material in a barrel with a bucket of water and work it into a thin paste with a spade or large paddle, then dilute with water to make exactly twenty-five gallons. When thoroughly stirred, each gallon will contain four pounds of arsenate of lead, and the amount of poison for each spray tank of mixture may be measured, thus avoiding the trouble of weighing small lots.

For the Elberta, Bell, Reeves and other varieties of peaches of about the same ripening season, the following schedule of applications is advised:

First Application—About the time the calyces or shucks are shedding from the young fruit, spray with arsenate of lead at the rate of two pounds to fifty gallons of self-boiled lime-sulphur mixture. Since this application is rather early for scab, and since serious outbreaks of brown rot do not usually occur at this time, the self-boiled mixture may be omitted in many cases with reasonable safety. But during warm, rainy springs, especially in the South, the lime-sulphur mixture will doubtless be necessary in this application. In case the self-boiled lime-sulphur mixture is not used, there should be added to each fifty gallons of water the



WORK OF THE PLUM CURCULIO
Deformed apples, due to curculio punctures. Reduced about one-half

WORK OF THE PLUM CURCULIO
Deformed peaches, due to curculio punctures. Reduced about one-half

milk of lime made from slaking two or three pounds of good stone lime, in order to counteract any caustic action of the arsenate of lead.

Second Application — Two or three weeks later, or about one month after the falling of the petals, spray with the 8-8-50 self-boiled lime-sulphur mixture and two pounds of arsenate of lead.

Third Application—About one month before the fruit ripens spray with the 8-8-50 self-boiled lime-sulphur mixture, omitting the poison.

For the earlier maturing varieties of peaches, such as Waddell, Carman and Hiley, the first two treatments outlined above will usually be sufficient, but in very wet seasons badly rotting varieties would probably require three treatments. Late varieties, such as Smock and Salway, having a longer season, would not be thoroughly protected by three applications, but on account of the expense there is hesitation in recommending a fourth spraying. In view of the results obtained on midseason varieties, it seems likely that three treatments will ordinarily be sufficient for the late varieties.

During the operation of spraying, the mixture should be kept well agitated. Owing to the tendency of the self-boiled lime-sulphur mixture and the arsenate of lead to settle readily, this point can not be too strongly emphasized. If the spraying outfit is not equipped with a good agitator, the spray will not be evenly distributed, with the result that some of the trees will be oversprayed while others will receive an insufficient application. The early applications of spray should be made rather heavy and very thoroughly to insure the destruction of the curculio and protection against scab. The last spraying, a month before ripening time of the fruit, should be made with fine nozzles, the object being to give the fruit a uniform coating of a mistlike spray. Heavy drenching of the trees at this time should be avoided, to guard as much as possible against the staining of the fruit at picking time.

SAN JOSE SCALE AND ITS WORK
Peach twig, moderately infested, showing male and female scale. Enlarged four times.

THE SAN JOSE SCALE AND ITS WORK
Peach limb badly infested with scale. Enlarged twice.

ARSENATE OF LEAD FOR THE PEACH TWIG BORER

BY C. P. GILLETTE, COLORADO AGRICULTURAL COLLEGE, FORT COLLINS

THE peach twig borer was rather severe in its damages to the peach in Colorado the past spring and summer. While many small twigs were killed, still the greater injury was in the loss from gummy and wormy fruit later in the season. Many inquiries have come to the Colorado Experiment Station in regard to control of this insect. In Bulletin No. 119 of the Colorado Experiment Station Mr. E. P. Taylor, at that time field entomologist for the station, reported upon the comparative values of lime-sulphur mixture and arsenate of lead, as indicated by a test that he carried through in the orchards at Grand Junction and Palisade, in 1906, for the control of this insect.

Lime-sulphur mixtures, in the proportion of fifteen pounds of lime to fifteen pounds of sulphur and fifty gallons of water, was thoroughly sprayed upon the trees just as the pink tips of the buds were beginning to show. Thirty-eight trees were used in the experiment. On these trees, by careful counting, Mr. Taylor found that an average of only 4.23 twigs had become infested. Arsenate of lead, ten pounds to one hundred gallons of water, was used at the time upon thirty-six of the trees, and as a result an average of but 1.25 infested twigs per tree could be found. The check trees, eighteen in number, without any treatment, gave an average of 42.75 infested twigs per tree.

The spring brood of this insect infests the buds and tender growing shoots; the later brood attacks the fruit. As in the case of the codling moth, kill the first brood and so prevent the second.

A knowledge of the above facts should save peach growers thousands of dollars.

Only one treatment was used in any case. A very fine spray should be applied and made to cover every part and particle of the bark on the limbs. Do not use so much as to make it run down around the tree.

WHEELBARROW CURCULIO CATCHER USED IN NEW YORK STATE (From Slingerland)

CURCULIO CATCHER MADE OF SHEETS ON FRAMES USED IN GEORGIA. (Original.)

PACKING PEACHES IN THE ROGUE RIVER VALLEY

BY E. RISTE, ASHLAND, OREGON

IN THE following brief article the general practices of growers in the vicinity of Ashland will be given. The writer is not advancing any theories nor recommending any changes, though changes are being worked out and a pack, already a good pack, is being improved.

It is a pleasure to enter an Ashland peach orchard, well kept, ready for picking; go with the pickers to the trees, watch the packers at their tables, and follow the fruit to the shipping station. It is a greater pleasure to pick the peach, just ripe, and let it make the shortest journey to its destined end—the consumer.

In the vicinity of Ashland the most of the orchards are in the low hills rather than in the "first floor" lands. The soil is granitic, supplying the right kind of nutrition which, together with the soil and air drainage, form the conditions for the production of the perfect peach. The best in flavor—the best shipper.

To know when and how to pick a peach requires both experience and skill. The first step in packing is the picking. You must know two things: First, when to pick; second, just how to pick. Different varieties must be picked at different stages of ripeness. The weather conditions will modify the time to some extent of even one variety. The peach picked "green" is neither a good shipper nor a good keeper, to say nothing of not being a good peach. Peaches are hauled by wagon from Ashland for from seventy to one hundred miles, and the peach picked "just ripe" is the best shipper. No rule is followed—it is a matter of experience and judgment.

SAN JOSE SCALE AND ITS WORK
Peach tree with top killed by scale

In picking, pick with the hand, not the fingers. Reach over the peach, letting the peach rest in the palm; the pressure to remove the fruit from the stem is exerted from the wrist, not from the fingers. No mark should be found on even the ripest peach. Handle with care; be as careful as with an egg. There should be no pouring from basket to box, but when filled, let the basket be sent to the packing table. The best orchard men will not hire pickers by the box or basket, but by the day. As Mr. Hoover, of Phoenix, says: "When a man works for me by the day I can get him to pick, or pack just as I want it done. When he works for himself, by the box, he is not as apt to work for my interests as for his own." Piece work in the packing houses is not generally satisfactory. The problem of help in the orchards has not been solved here. Perhaps it will not be until the fruit farm is small enough for the owner and his family to do all the work. The objection is made that the orchard man can not take this great care in handling his fruit—but in this section the men who are making the money are using the greatest care.

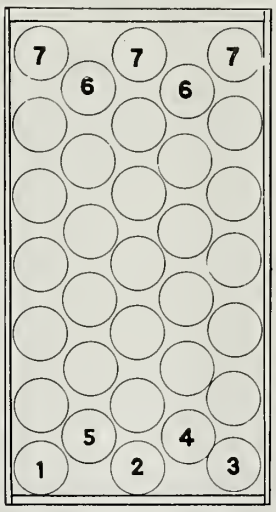


FIG.1
FANCY PACK

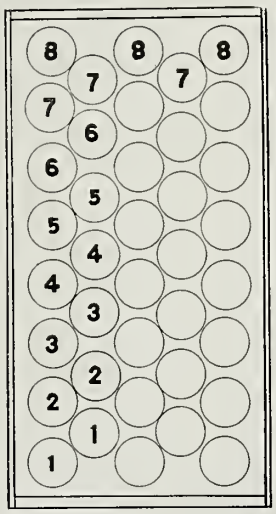


FIG.2
"A" GRADE

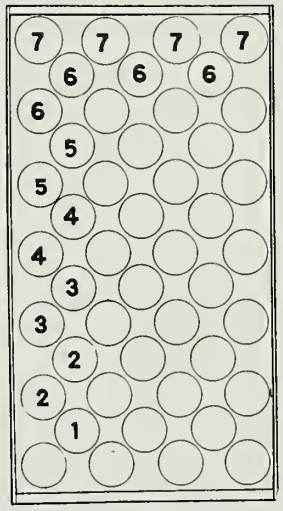


FIG.3
"B" GRADE

The packing table is in a well-lighted, well-ventilated part of the packing room. Each packer has room before her for two boxes. She will usually run two grades at a time; that is, two boxes will be before her. A six-inch board on edge is placed just far enough from the edge of the table to raise the farther end of the box, giving it a tilt. On one side is the basket from which the peaches are packed, on the other is the tray containing the packing paper, usually the 8x8 duplex, plain white.

In front of the packer is a box to receive the fruit that for any reason does not go into the packed box. Behind the packer are benches on which the packed boxes are placed until nailed and placed on piles. Convenient to the packer is a pile of made boxes, usually prepared by the nailer.

After packing, the packer places the grade of the peaches, as "A," "F," or "B," and her number on the box, or a stamp is used: "Grown and Packed by _____, Ashland, Oregon." Many place the name of the fruit "ranch" with their name, and a fancy label is used. The stamp is placed on the upper right-hand of the end, and the remainder of that end is used for shipping directions. When the fancy label is used, the grower's name is placed on the label and the other end, left blank, is used for shipping directions.

FIGURE IV.

More difficulty is experienced in sorting than in packing; that is, the packer is troubled to pick up the right size peach from the basket. The good packer

FIGURE V

knows just what she wants, and does not pick up and then reject any fruit; but the novice is apt to "throw around" her entire basketful if allowed to do so. Only practice enables one to select unerringly, and the packer who has not an accurate eye is either slow or a poor packer. The inexperienced packer is helped by placing on the shelf before her a model size of "F," "A," "B," etc.—but soon the model must be in her "eye," or rather, in the mind.

Grading or sorting by others than the packer is generally not satisfactory, as it makes an extra handling of the fruit necessary, which is to be avoided if possible.

The boxes used in packing in the Ashland district, are 11 inches wide, 19¾ long, and both the 4½ and 5-inch depths are used. When well packed this box holds twenty pounds of fruit.

We pack three grades of commercial peaches, the fancy or "F" grade, running not more than 66 to the box; "A" to 76; "B" to 88. In these grades the number must not exceed the figures indicated. A fourth grade running to 100 has been packed, but the tendency is to keep to F's, A's and B's. The growers who are thinning their fruit so as to grade in this way, are making the most money. It costs as much to box, pack and ship the low grade peach as it does the better grades, and it is the experience of the growers that it pays him best to thin for about an "A" size. In Mr. A. Johnson's orchard last year, for example, his Early Crawfords packed 97 per cent "F," "A" and "B," and over 85 per cent "F" and "A."

One plain rule can be given regarding packing—"Never pack a peach when warm." If packed during the heat of the day, set in the shade until cool. At Ashland, even in the warmest weather, the peach will soon cool.

It is a difficult matter to show by diagram how to pack peaches. The "nest" pack is popular here. This pack is made by placing three peaches at the end (Figure 1), stem down (toward the cover board), the fold of the wrapping paper being made over the soft end of the peach. Peaches number 4 and 5 come up snug against numbers 1, 2 and 3, but their size is such as to hold them so that they do not touch the end of the box.

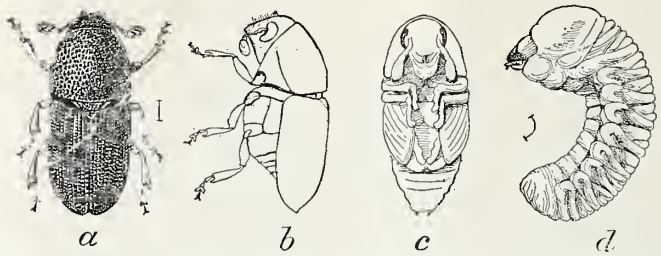
When properly selected as to size in the "F" pack, there will be seven of the rows across the box from end to end, with three in each row; six rows with two in each row. This is one layer; the other will have seven rows with two in each row, and six with three each. In each grade there will be some too large to make these full rows, bringing the total between the numbers set above for each grade. Studying the diagrams in figures two and three, the form for the "A" and "B" pack will readily be seen.

Another form for packing is being used, one recommended by the inspector at this point, Mr. T. F. Smith. In this the pack is begun as in figure 4 and is called the "three-three" pack. Some peaches are grown so large that the only pack is a "two-two" pack. Some objection is made to this "three-three" pack, in that a larger peach is required for each grade, to fill the box. But we are seeking all the time to put up a better pack, one which will give the consumer greater satisfaction, and therefore, bring us more money for our peaches.

In packing, the packer will "draw down" his pack when about half way to the upper end, by spreading the fingers of both hands over the row and drawing down carefully, bringing the peaches "snug." Care must be taken that the peaches be not bruised, neither by drawing too tightly nor by bringing the pressure too strongly on one point.

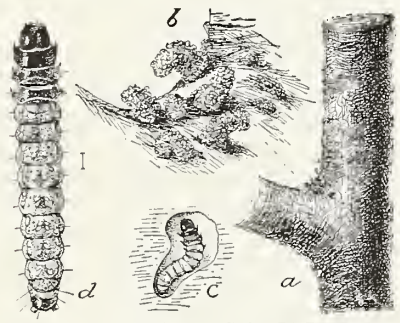
In what is called the "straight" pack, the second layer is begun by placing directly above numbers 1, 2, 3, etc. (Figure 5), the second layer being the same in relative position as the first—stem end up, toward the cover.

The packed fruit is hauled on wagons with springs, and carefully covered to

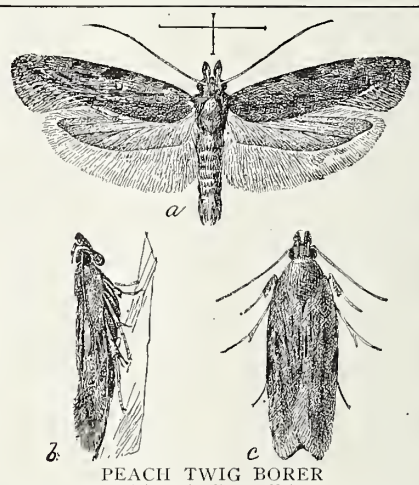


FRUIT TREE BARK BEETLE
(*Scolytus rugulosus*)
a, Adult beetle; *b*, Same in profile; *c*, Pupa; *d*, Larva. Enlarged ten times. (From Chittenden.)

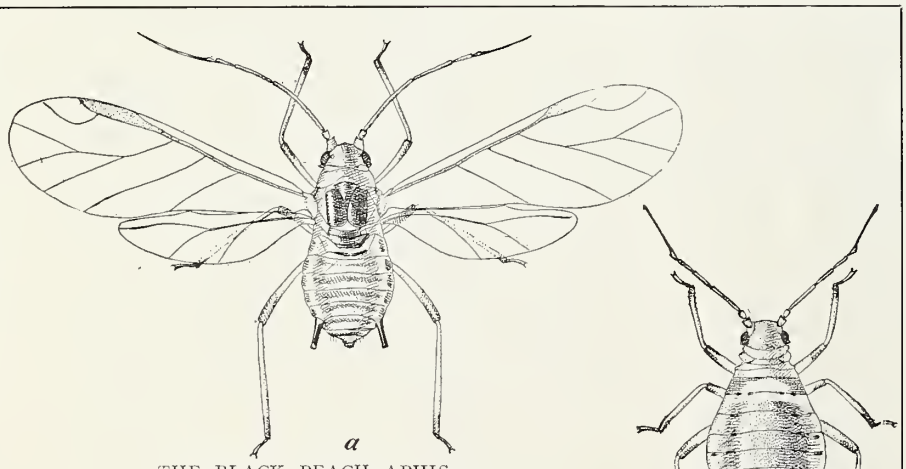
The fruit tree bark beetle attacks plum in preference to other plants, and the apple, peach and cherry are about equally attractive. Pear, quince, apricot, nectarine, mountain ash and Juneberry are also infested, and in Europe, to which it is native, hawthorn, elm and mountain ash are said to be among its food plants. In orchards where proper attention is given to maintaining a healthy, vigorous condition of the trees, but little is to be feared from the fruit tree bark beetle. Since it is not able to multiply to any extent save in trees that are in a weak, diseased or dying condition, these should frequently be searched for and at once destroyed by burning. It will not be sufficient to simply cut them down, for the beetles will continue to breed in fallen trees left on the ground, thus reinfesting the orchard.



PEACH TWIG BORER
a, Twig of peach showing in crotch minute masses of chewed bark above larval chambers; *b*, Same, more enlarged; *c*, Larva in its cell, enlarged; *d*, Young larva from above, more enlarged. (From Marlatt.)



PEACH TWIG BORER
(*Anarsia lineatella*)
a, Moth with spread wings; *b* and *c*, Same with wings closed. Much enlarged. (From Marlatt.) Remedy, sulphur-lime. Use as the buds are swelling. Supplement with arsenate of lead when buds are open. Repeat in one week if necessary.



THE BLACK PEACH APHIS
(*Aphis persicae-niger*)
a, Winged agamic female; *b*, Wingless agamic female
Much enlarged. (Original)

Trees from the nursery should be carefully examined before planting, and if aphides are found on the roots they should be destroyed by dipping the roots in strong tobacco water, kerosene emulsion or whale oil soap solution.

protect from dust or heat. At the warehouse the fancy label is pasted on ends. In the iced car, the boxes are cleated and nailed between each layer, and strongly braced. We have no complaints that fruit does not arrive in good condition at the market.

We are emphasizing these points:

Thin fruit on trees so as to produce the "A" grade peach.

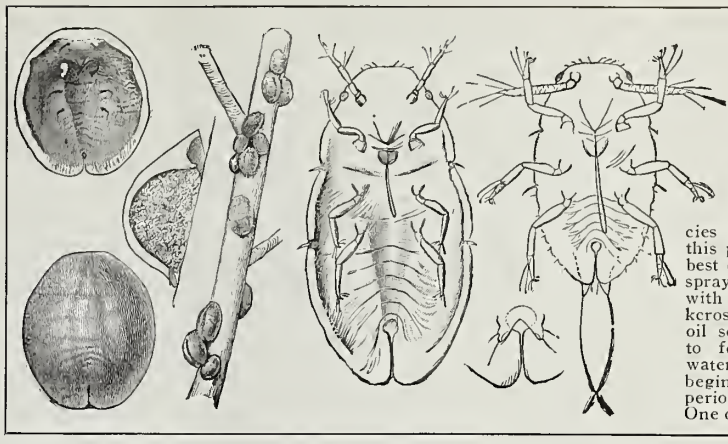
Take the greatest care in picking.

Get the peach at the right stage of ripeness—and pack carefully.

Make the pack uniform, so that one box will be as good as another.

We are confident that we can grow and market the best peach in the world. The flavor of our peach is unsurpassed. Grown generally with little or no irrigation, we can pick in a ripe state and market anywhere in that condition.

To one who has a general understanding, these points may be clear. To one who does not know, but wishes to know, we say, "Come and see, we can show you."



PEACH LECANIUM (*Eulecanium nigrofasciatum*) Adults at left, natural size and enlarged; young at right, much enlarged. (Howard.) It is probable that in orchards treated for the San Jose scale that treatment will also serve to keep this species under control. Where this pest only is present it is best combatted by thoroughly spraying the infested trees with a 15 to 20 per cent kerosene emulsion or whale oil soap solution, one pound to four or five gallons of water, just as the eggs are beginning to hatch. Hatching period extends over a month. One or two sprayings advised.

METHOD FOR THE TREATMENT OF PEACH BLIGHT

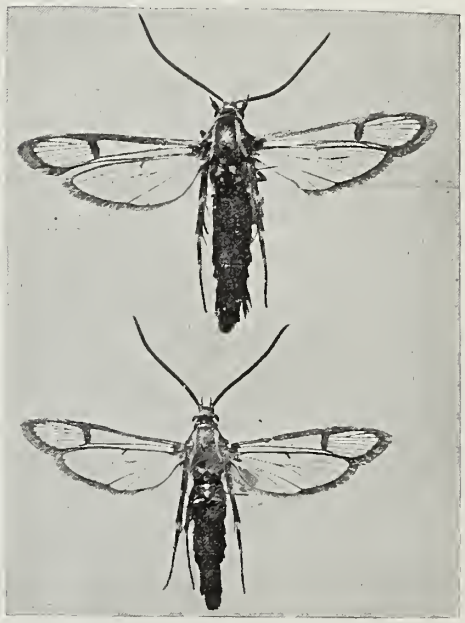
BY H. S. JACKSON, EXPERIMENT STATION, CORVALLIS, OREGON

IT IS to be hoped that every grower of peaches will spray this fall and so help to eradicate peach blight from the state. The reputation of Oregon peaches is seriously threatened by the presence of the fruit spot on shipped peaches, as is shown by the number of shipments that have been condemned.

PEACH TWIG BORER
a, New peach shoot withering from work of larva; *b* and *c*, Larva and pupa, respectively; *d*, Tip of pupa, side view. Hair-line indicates actual length. (From Marlatt.)

The disease known as peach blight, or California peach blight, is caused by a fungus technically known as Coryneum beyerinkii. It occurs in three forms: on the twigs, where it produces a blight of the buds and sometimes small cankers at the base of blighted buds, which may girdle twigs and small branches; as a leaf spot, producing a shot-hole effect, and as a fruit spot. It is in the latter form that the grower most frequently notices the disease and the one which he is liable to consider the most serious. It is, however, to the eradication of the twig blight that he should direct his most strenuous efforts. If the twig blight could be thoroughly eradicated there would be no source of infection for the young fruit in spring, and it will be free from the fruit spot at maturity.

The disease under discussion is easily controlled by spraying with bordeaux mixture in the fall. Use the 6-6-50 formula and apply as soon as the fruit is off and before the fall rains begin, or as soon after as the weather permits. It is important that a special effort be made to thoroughly cover all the twigs and branches. If scale is present, use lime-sulphur (30 degree Beaume) diluted 1 to 12. In very severe cases it frequently happens that one fall spraying will not be sufficient to control the fruit spot. In such cases summer spraying may be successfully practiced. A recent bulletin from the Oregon Agricultural College and Experiment Station, by Professor A. B. Cordley and Mr. C. C. Cates, entitled "Spraying for Peach Fruit Spot," gives the results of two years' experimentation in fall and summer spraying for the fruit spot, and it is conclusively shown that this form of the disease may be practically eradicated by summer spraying with bordeaux mixture or lime-sulphur. If bordeaux is preferred, and it seems to have given slightly better results, the 3-6-50 formula should be used. If lime-sulphur is used as a summer spray a stock solution registering 30 degree Beaume should be diluted 1 to 25. The first application should be made about May 10 and a second about June 1.

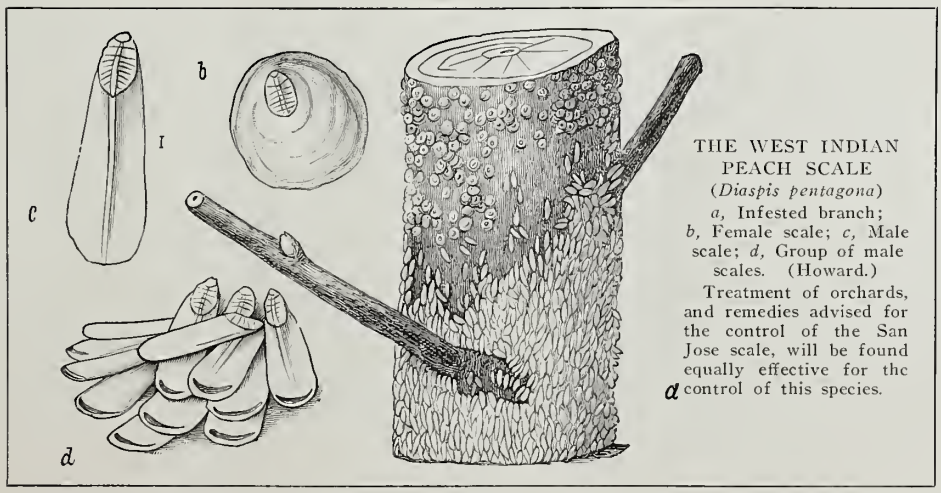


LESSER PEACH BORER MOTH
Female above, male below. Enlarged twice.

The fall spraying was found to be the most important. Continued use of fall sprays should be found sufficient to hold the disease in check after once under control.

Every grower of peaches should have a copy of the bulletin mentioned above, and it will be sent to any one on application to the O. A. C. experiment station. Specify bulletin 106.

The station department of plant pathology has recently been reorganized and is better equipped than ever before to answer inquiries in regard to plant diseases, and is ready to do so at any time.



THE WEST INDIAN PEACH SCALE (*Diaspis pentagona*) *a*, Infested branch; *b*, Female scale; *c*, Male scale; *d*, Group of male scales. (Howard.) Treatment of orchards, and remedies advised for the control of the San Jose scale, will be found equally effective for the control of this species.

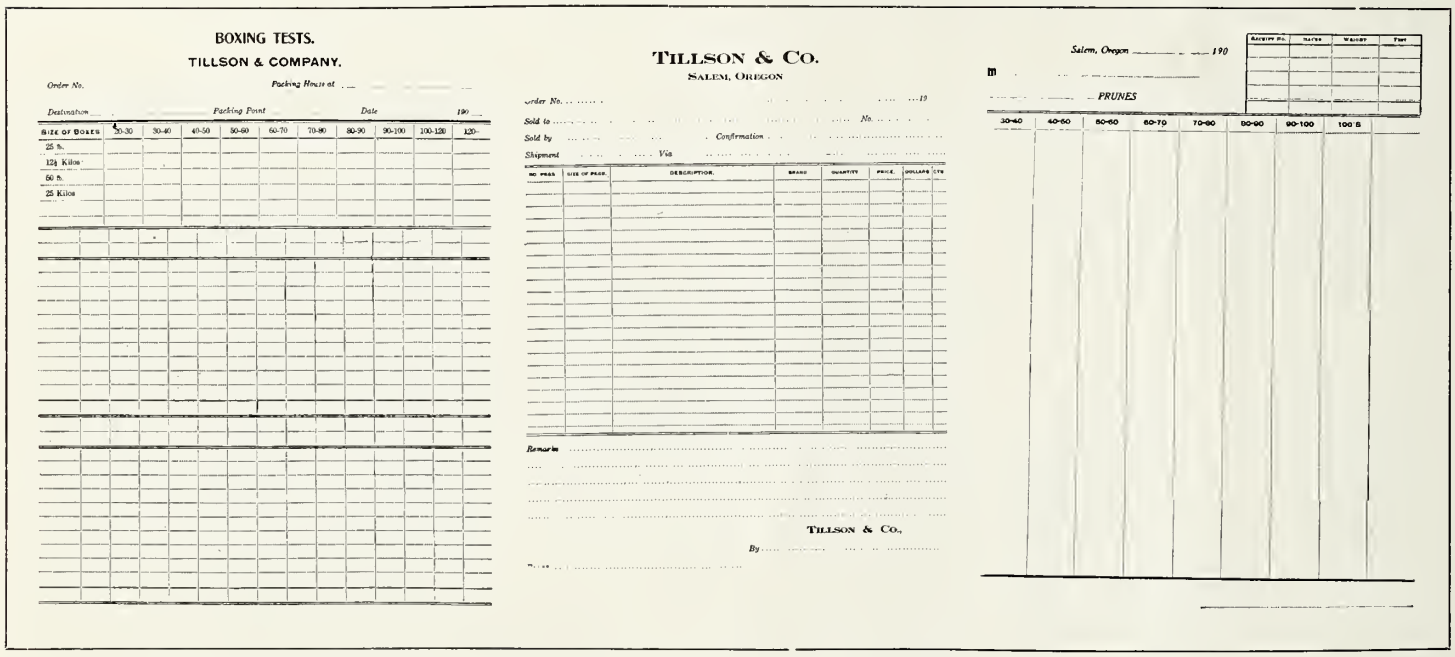
TREATISE ON THE MARKETING OF PRUNE CROPS

BY W. C. TILLSON, SALEM, OREGON

REPLYING to your request for some items on prunes, I beg to advise you that our growers are generally keeping very well advised, both as to crop and market conditions. The matter of disposing of the crop is being very generally discussed. In this there are three plans open to the farmer. The first is to consign his fruit to some commission house in the East and take his chances as to results. As this has nearly always resulted in great loss and disappointment, it has generally been abandoned. The second plan is the co-operative one, resulting in the handling by fruit unions or by committees selected by the growers. The third plan is for the grower to sell directly to some commercial packer. The co-operative plan is theoretically a good one, but has not generally worked out well in practice, and so far as handling prunes by fruit unions or pools goes, results have always, after one or two seasons' trial, been found unsatisfactory, unprofitable and have been abandoned. Many reasons contribute to this result. As a rule they have lacked the ability in management, the long training and business experience that are required, and their officials generally have no further interest in results than their salaries. Then the growers all have different ideas as to how the business should be conducted and they very seldom if ever work in harmony and for the general good for any length of time. The grower in such cases surrenders the control of his fruit to the managers of such union or pool; they sell it when they please, for what they please, and pay for it when convenient. The result is that the farmer never knows for many months what his fruit is to bring him, and the long delay in payment results in embarrassment. The third plan, that of selling to a commercial packer. (I will say that my reasons may be somewhat warped by self-interest, as I am such a packer myself. But my reasons must be taken for what they are worth, and due allowance made for self-interest.) Growing prunes and the buying, selling and packing them are very separate and distinct industries. Each requires long experience and trained ability to achieve success. I submit that the farmer lacks the training and experience required in a successful packer, and the packer certainly lacks the necessary training and experience required in growing and curing fruit. So it is better to specialize and each confine all his energy and ability in his own field of effort. You will very seldom find a grower of livestock, grain or other farm products willing to turn it over to some committee or union to handle for him. Each farmer prefers to sell his crop to whom he pleases, when he pleases, and when he delivers his goods collect his money. I think the average prune grower should handle his crop in the same way. When the proper time comes for selling he should find where he can get the most money for his crop, sell it and insist on spot cash when the fruit is delivered. He thus controls his own business, gets his money promptly, and in turn can pay his debts promptly with the proceeds. But costly experiments and new plans are for a time popular, and experience of other localities is usually lost sight of.

Crop conditions at this writing indicate an output in Oregon of probably three-fourths of last year's crop, the fruit now indicating large sizes, and market conditions better than for many years. I look for good financial returns to the farmer.

Now a word as to the prune industry. The unfortunate climatic conditions of last year resulted in a crop of the poorest quality ever grown, and prices for it were correspondingly low. No money was made from it as a whole. The industry, from that one bad year, has had many condemn it as an unsafe and unprofitable one. I wish to say that no branch of agriculture meets with uniform success and profit every year. Overproduction and crop failures occur occasionally in all lines—more seldom in prunes than in any other line, the writer knows. Apples seldom furnish two big crops in succession, yet the apple industry is not abandoned. People did not quit raising wheat because it at one time sold for 50 cents per bushel, or less than the cost of production. Then why get discouraged because last year's crop was poor in quality? The market for Oregon prunes is widening, their popularity is increasing, and they are as staple today as any article the farmer grows. The average profit of the acres devoted to prunes in the Willamette Valley during the past ten years, I submit, has been greater than any other crop grown. Unlike apples, they are not, if properly cured, going to spoil if frozen; can be carried for a year or over if necessary; can be shipped with safety to any part of the world. Prunes are not as speculative as fruit that has to be marketed in the fresh state and at once, nor as hops. They are a necessary food product, and like other staples are not liable to violent fluctuations in value. My advice to prune growers is to take the very best possible care of their orchards, and the orchards will then take care of their owners.



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HOW APPLES ARE PACKED

And now the honest farmer packs
His apples up from town.
This is the top row of his sacks:

O O O O O O O O O O O O

And this is farther down:

o o o o o o o o o o o o o o o o

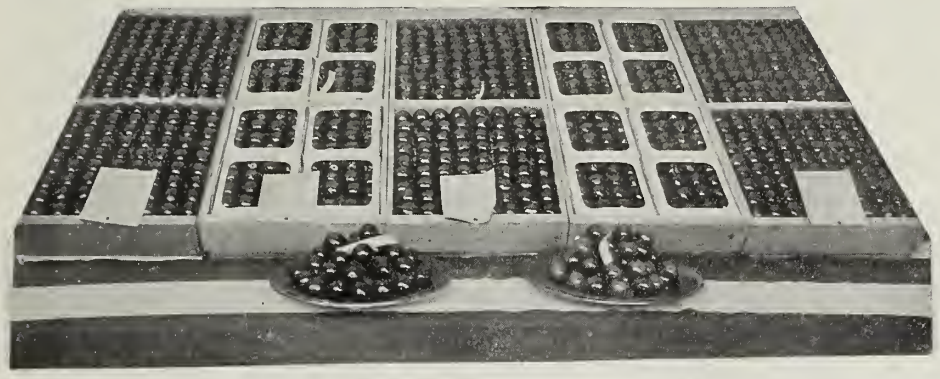
— Chico Record.

WILLAMETTE VALLEY HORTICULTURAL OUTLOOK

BY L. T REYNOLDS, OF SALEM, OREGON

THE subject is a broad one. While beginnings have been made in the horticultural development of this great valley, the possibilities are so vast that what has been done, as compared to what may and will be done, in the culture of fruit in this district seems hardly worthy of comment. And yet the experience of those who have been engaged in fruit growing in the different sections of the valley may prove of value to those who are just beginning.

We who are looking forward to the pleasure and profits to be obtained from our orchards, but recently planted, or perhaps as yet only on paper, can get invaluable lessons from the experience of the pioneers in horticulture in the Willamette Valley, like Dr. Caldwell, H. E. Dosch, C. E. Hoskins, S. A. Clarke and others, whose experiments often proved costly to them but may become very useful lessons to us.



PRIZE WINNERS AT SALEM CHERRY FAIR, GROWN AND PACKED BY J. R. SHEPARD

It has been proven beyond question that in the Willamette Valley have been grown as fine apples, pears, cherries, prunes, berries and nuts as can be produced anywhere. There is no doubt then as to what may be done in the horticultural development of this valley. Its future depends wholly upon the care and industry of its citizens.

Nature has done her part. She has given us the fertile soil, the sunny slopes and hillsides, the warm, sandy bottoms, the rich, deep loam of the bench lands, and we have only to select the location suitable to our needs, intelligently plant, cultivate and care for our trees and we can confidently await the fruition of our orchards.

Apparently a great boom has begun in the planting of orchards. Men and women from all parts of the country are flocking to the Northwest to go into the business of fruitgrowing.

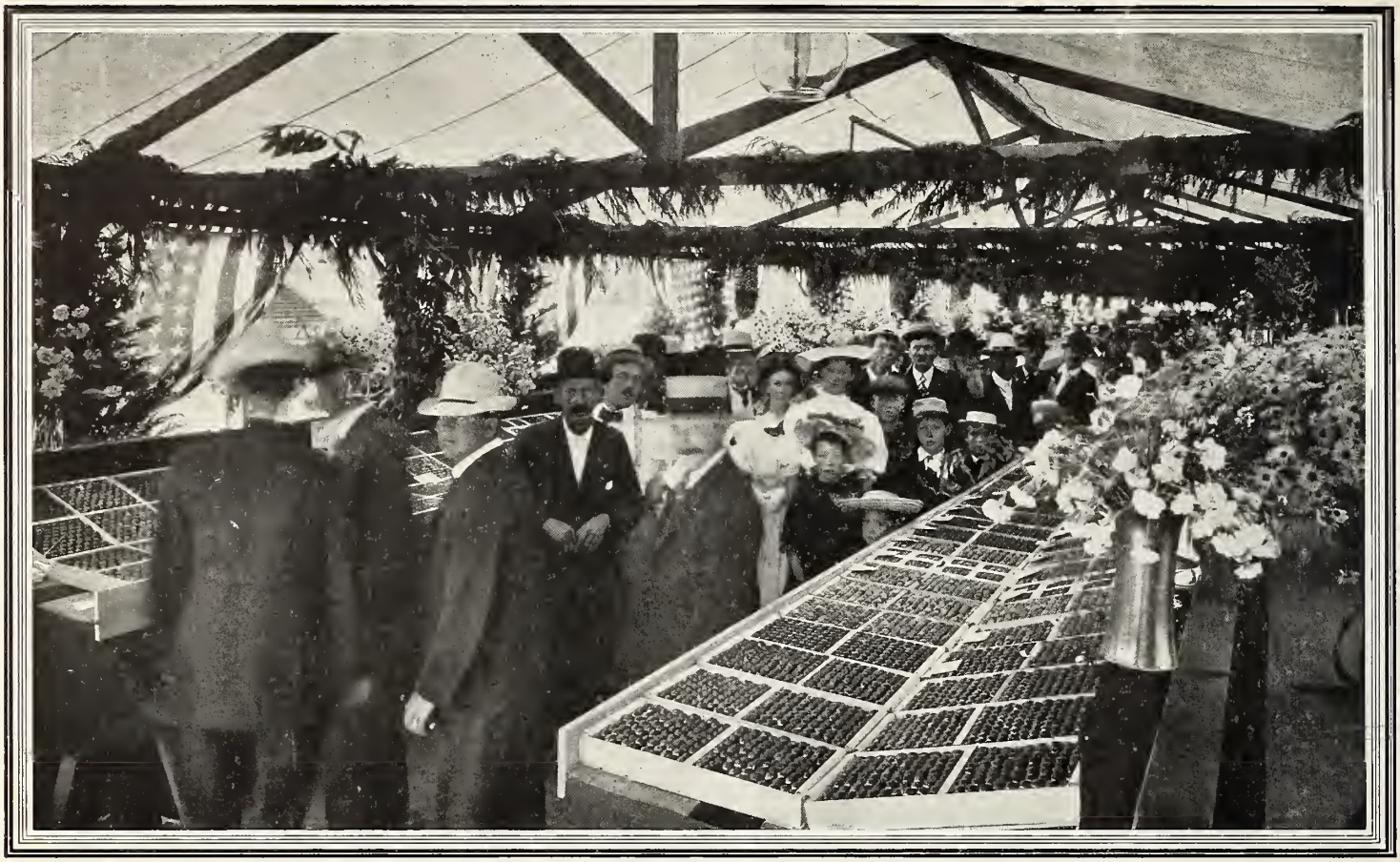
Thousands of orchards will be planted in the Willamette Valley within the next year or two by persons who have never grown or cared for fruit trees but have become enthused with the idea that the shortest road to wealth lies in rows of apple trees.

The future of horticulture in the Willamette Valley depends to a great extent upon the wisdom with which these orchards are planted. If well-grown trees are set in fertile, well-drained soil, are carefully selected as to variety and wisely tended during their early years, the value of the fruit crop of the valley in fifteen years will be estimated in millions of dollars.

But while the writer is optimistic in regard to the outlook for horticulture in the valley and state, it seems an opportune time to offer a word of warning to the inexperienced planter or would-be purchaser of an orchard.

In the purchase of an orchard site, see that you are getting good soil. A shallow, rocky soil will not make for you the best possible orchard, whether it be

CHERRY AND PRUNE ORCHARD IN BLOOM NEAR SALEM, OREGON



THE SALEM CHERRY FAIR WILL BE HELD AT SALEM, OREGON, JULY 7, 8 AND 9

located in Oregon or Washington, in Hood River, Rogue River or the Willamette Valley. Do not buy a stiff, wet, clay soil—you may wish to haul out your fruit or spray your trees after the rains have begun. See that your soil has good drainage—fruit trees do not thrive in poorly-drained soils. Beware of planting fruit trees in frost pockets.

Study the adaptability of the proposed location of your orchard to the variety of fruit you desire to grow. You can usually determine this by investigating the results that have been obtained by others in the locality. Because a prune orchard has been very productive and profitable in a given location and soil it does not follow that an apple or pear orchard will do equally well.

If our boards of trade, real estate men and promoters of orchard companies would use care in locating would-be purchasers of orchard lands on soils adapted to their purposes, there would be fewer disappointed fruit growers and the whole state would profit.

It has not been many years since a boom was on in the planting of prune trees and prune orchards were planted in all parts of the valley. Where planted on suitable soil and properly cared for these orchards have proven profitable ventures and the prune industry is one of the important wealth producers of the state, yet hundreds of prune orchards were planted which only caused loss to their owners because set in poorly drained, unsuitable soil.

I am asked, what is the outlook for horticulture in the Willamette Valley? I answer, it has a wonderful future, for it has innumerable advantages. From a commercial point of view two things are of supreme importance, superiority of product, and economy of production.

Enough has already been done in the production of small fruits and cherries to demonstrate that we can successfully compete with any other locality in the production of the highest grade of canned berries, cherries and pears, and the development of a profitable shipping business in these fruits, green, awaits only a sufficiently large production to warrant the outlay necessary for proper handling of the business.

Our dried prune business is already well established and the product of the Willamette prune orchards is favorably known to the trade in both America and Europe.

In the production of apples, pears and walnuts the increase will be most rapid in the future, not alone because these fruits are receiving greater attention everywhere at the present time, but also for the reason that superior fruit of these varieties can be produced when given proper care. Economy of production in this valley is certainly an attractive feature to the intending investor in fruit lands, from the fact that suitable land can be purchased at the present time at a more reasonable price than in most other fruit sections, and that help can be profitably employed, in diversified fruit production, at nearly all seasons of the year.

Both are of great advantage in economical production, and as said before, he will win in business competition who can produce the best article at the least cost.

The outlook for horticulture in the Willamette Valley is excellent. Its future depends on how we use opportunities.

STRAWBERRY, AS THEY GROW NEAR SALEM, OREGON

LINN COUNTY, OREGON, A FRUIT GROWING SECTION

BY J. M. HAWKINS, ALBANY, OREGON

THERE are several reasons why Linn County is just beginning to be noticed as a fruit section, and why such development did not take place years ago.

First: This section was largely settled in the early fifties under the old donation land laws, which gave the heads of families 640 acres of land. These large holdings have been kept intact, many of them to the present time, the owners refusing to cut them up, thus making the settlement and intensive cultivation of small tracts impossible.

Second: Linn County was settled by an agricultural people and herdsmen; its broad prairies and fertile soil offering splendid inducements to the growing of grain, while its foothills and mountain slopes were ideal for the raising of stock. These people looked upon the fruit grower and truck farmer as an imposter and made it almost impossible for him to get a footing, compelling him to buy their entire holding, which practically prohibited his business.

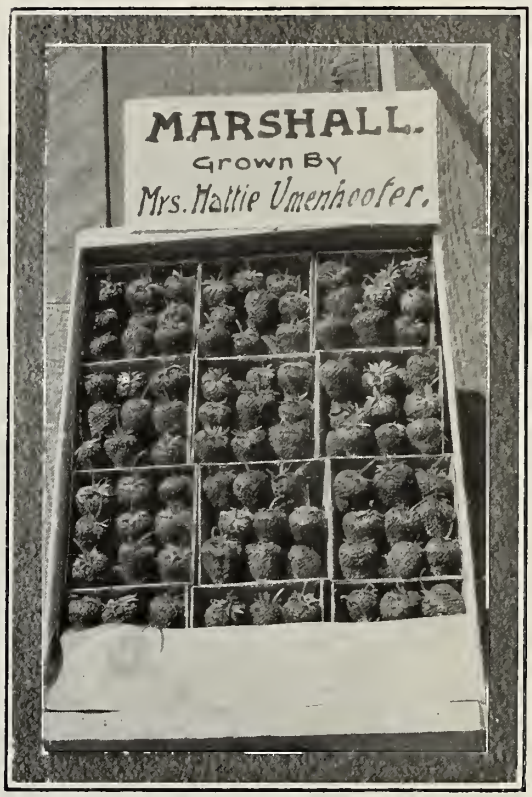
Next, was the lack of transportation facilities. In the late forties the first orchards were planted in Linn County on what is known as the Albany Prairie, near Oakville, on the farm of Joseph Hamilton. The excellence of the fruit of this orchard and the high prices for which it sold induced all the early settlers to plant large orchards, with the expectation of getting rich, and many did.

But the orchards of California came into bearing and the early seventies found the Willamette Valley with an immense crop, our California market, which had been taking our fruit at fabulous prices, gone, on account of their home production, and no facilities for transporting to the East.

The outlook was discouraging; the splendid young orchards were neglected, and thousands of bushels of as fine apples as one ever saw rotted under the trees. About this time diseases began to make their appearance and these neglected orchards soon succumbed to their ravages—hence the unsightly, moss-grown old orchards that are to be seen on every hand.

A number of years later some parties conceived the idea of large commercial orchards, and several plantings were made. Serious mistakes, both as to selection of soils and varieties planted, were made, but out of these mistakes have come the lessons which are being appropriated by the progressive, thinking horticulturist of today. Large companies are being organized with sufficient capital to take over these extensive holdings, and they are being cut up into five, ten and twenty-acre tracts, to be sold to the planter, in some cases the company planting and caring for the orchard for a term of years.

This plan is placing the small fruit ranch within easy reach of any one who is ambitious to secure a competence for old age and to engage in the most delightful of all out-door occupations, that of the orchardist.



PRIZE STRAWBERRIES GROWN IN LINN COUNTY OREGON

The above is a crate of twelve boxes of Marshall berries which took the grand prize at the Lebanon Strawberry Fair held June 4 and 5, 1909. The crate afterwards sold at auction for $33.00, thus setting the top price for strawberries on the Pacific Coast.

Berries and small fruits are being cultivated on separate tracts or between the rows of trees while waiting for them to come into bearing, and is proving quite profitable, any and all varieties grown anywhere in the temperate zone doing well here. Added to this is the assurance of large and certain returns from the intelligent care of bees and poultry.

The question of transportation is fast being settled. The completion of the Oregon Electric Railway from Portland to Albany, with its feeders penetrating the rich river valleys and the rolling foothills, and the building of the Albany and Interurban to Lebanon, Brownsville and the territory adjacent to the Santiam and Calapooia Valleys, gives a most gratifying solution to this question.

Linn County contains a vast area of as fine garden and orchard land as can be found in the Northwest, and after all these years of adverse circumstances she is again coming into her own and resuming the place forfeited a generation or so ago.

With the problem of transportation practically settled, the cutting up and planting of these large tracts made possible through organized capital solves the question, and we shall soon see the soils of old Linn blossom as the rose.

On the west slope of the Cascade foothills are thousands of acres of deep, rich, red soil of a sandy loam nature that has been pronounced by the horticulturists of this state to be the very best in the state, and is beginning to receive the attention which has always brought satisfactory returns. Added to this productiveness of soil is a most delightful climate in the natural home of the rose, whose fragrance is in the air most every month in the year.

PERFECT ENGLISH WALNUT TREE NEAR ALBANY, OREGON

THRIFTY SMALL FARMER OF WESTERN OREGON

DR. JAMES WITHYCOMBE, OREGON EXPERIMENT STATION, CORVALLIS, IN THE PACIFIC HOMESTEAD

NATURE evidently intended that Western Oregon should be the home of the small farmer. Soil, climate, and the exceptionally wide range of crop production make conditions ideal for the small, prosperous farm home. It is a region where, under intelligent systems of husbandry, crop failure is unknown. There is no agricultural section where the labor of the husbandman is more sure of a reward. It is a land of immense agricultural possibilities; so great that the imaginations of the most optimistic mind can scarcely comprehend the scope of its ultimate development along these lines.

The hope of this state rests in her agriculture. We can with pardonable pride boast of our 300,000,000,000 feet of standing timber, of our almost exhaustless mineral resources and other forms of natural wealth, but after all the great, unfailing resource of the state is agriculture. The farms of Oregon last year yielded $100,000,000, and even this great sum is but a bagatelle of what the future has in store for the industry. The Willamette Valley alone when utilized to anywhere near its agricultural capacity will produce more wealth than the whole state is producing from the industry at present. We may premise the future and draw intelligent conclusions by making comparisons with the development of other agricultural sections similarly favored with a soil and climate not greatly unlike Western Oregon. Take, for example, the Island of Jersey, comprising 28,717 acres and having a population of 60,000 people, mainly supported from agriculture. At this ratio the Willamette Valley alone with its area of nearly 5,000,000 acres would support over 10,000,000 people. Ten acres on this island is considered a good-sized farm. Every part of available space is utilized. Intensive cultivation and the conservation of every form of plant food forms the basis of their success. Livestock husbandry and fruit growing are the principal industries. The island maintains 40,000 cattle. There is no agricultural country in the world better adapted for the production of livestock and for fruit growing than is Western Oregon, and large areas in other sections of the state. We may never reach the intensive agricultural development as enjoyed in the Island of Jersey, but nevertheless it furnishes us an excellent example and should at least afford us an inspiration as to the boundless opportunities for agricultural productions in our own state.

A new era, however, is beginning to dawn on the agriculture of Oregon. Progress along this line is going to be more rapid, perhaps, than the most sanguine anticipates. Large holdings of land will steadily grow fewer. Subdivision and consequent higher land values are the inevitable trend of the times. Land that is now selling for $50 per acre in large tracts will within a short time be selling for $100 per acre, or even much higher, in small tracts. Better transportation facilities and more stable markets are conducive to intensive methods of husbandry. A good omen for the future of the small rural home is the fact that individuals and corporations are rapidly developing the spirit of helpfulness by purchasing large tracts of land and subdividing the same. This augurs well for the development of the small, prosperous rural home. The electric railway is also a potent factor in bringing about these changed conditions.

In the advocacy of the small farm we do not wish to reflect in the least upon those who are farming successfully large holdings. It matters not whether the farmer be a small farmer or a large farmer, if he is properly utilizing the land he is a public benefactor. The great need of the state is more farmers. In booming cities and neglecting the country we are building a superstructure upon a weak foundation. The true basis of a substantial development of our state rests in the improvement of our agriculture. Instead of 40,000 farmers, the state should have at least 100,000 farmers. More families upon the land should be our slogan. The cities will take care of themselves, if we will only develop

A TYPICAL CHERRY TREE AT SALEM, OREGON

VINEYARD IN LINN COUNTY, OREGON

the country. Make the soil produce more wealth and we need have no concern as to the growth of our towns.

Perhaps the question may be asked what constitutes a small farm? This question may have a wide interpretation. First, it will depend upon the character of the soil and the purpose for which it is to be employed. Five acres of good onion or vegetable land would be a desirable small farm. Ten acres or even five acres of fruit land would be sufficient to support a family. Twenty acres could be made a good dairy farm and should maintain at least ten good cows, besides chickens, hogs, etc. Of course, the profits of a small farm would depend upon the personal equation of the farmer Some men who are especially expert in the growing of fruit and vegetables may secure a gross return of from $250 to $500 per acre, while others may not do nearly that well. Every acre of the average valley land should be made to yield at least $50 per year. This should be done even with dairying.

To be successful on a small farm one must not only farm intensively, but he must also be a specialist. The small farm will demand a high order of agricultural skill. There is no fear, however, as to the final outcome of the small farm. Such a farmer will be a strong advocate of organization. He will be well informed as to the problems of crop production and the distribution of the same. Time will be found to regularly attend the grange, farmers' institutes, and dairy and horticultural conventions. His work will always be well in hand, which unfortunately too frequently is not the case with the larger farmer. Furthermore, the small farmer will represent a great proportion of our most reliable citizenship. The environment of the well-kept, prosperous rural home is conducive to the development of strong, capable, conservative men and women.

The destinies of this state will be largely influenced by the character of our rural population and we can safely predict the influence will be good.

ORCHARD AT SHERIDAN, OREGON

EFFECT OF DIFFERENT ORCHARD COVER CROPS

BY W. S. THORNBER, HORTICULTURIST, WASHINGTON EXPERIMENT STATION, PULLMAN

THE dust mulch system of orchard cultivation so commonly practiced in the West is the ideal system those times of the year when the trees are not using the available plant food so far as the conservation of moisture is concerned, but has the very undesirable feature of exposing the bare surface of the soil to the burning rays of the sun during the summer season, causing the loss of its humus, and permitting excessive leaching of soluble plant food as well as surface erosion during the winter season. From the nature of the crop and the necessary cultivation, orchard trees are one of the hardest crops on the soil. The soil is bare and exposed to the elements during the greater part of the season, the fruit is all picked and carefully hauled away, the leaves that should naturally fall to the ground and form humus blow into the adjoining fields, and the prunings are burned in piles or left in some remote corner of the orchard to decay and incidentally form the breeding grounds of the various foes of the fruit grower. There is a constant demand upon the soil for plant food but nothing is ever permitted to return. A system of this kind cannot help but result in the depletion of the soil and serious if not permanent injuries to the horticultural industries of the state.

The commercial fertilizers are always expensive and usually difficult to satisfactorily apply to orchard crops, and since it is impossible to secure barnyard manure in sufficient quantities in most of our orchard districts there remains but one method to pursue; that is to grow the humus and such plant food as is possible on the soil in the form of cover crops. This is nature's method of improving the physical as well as the chemical condition of the soil and it is surely the most economical one, since the cover crop can be grown during and the land be made to grow two crops annually, not as competitors, but rather as co-operators in the production of fruit.

A cover crop is any crop grown among orchard trees during the interval between the regular fruit crops or normal season of tillage. It occupies the land at a season of the year when the fruit trees require little or no plant food, and is of value to orchards in the following ways: It directly improves the physical condition of the soil by the addition of humus and the loosening up of the subsoil by root action. It prevents hard soils from cementing and clay soils from puddling. It makes the soil more moist by holding the snows and rains until they have had a chance to soak into the soil. By drying out the soil early in the spring, thus making early tillage possible. It serves as a protection of tender roots from frost. It catches and holds the easily lost nitrates of which the trees are not in need at that season of the year. It renders plant food more available by root action and the decomposition of humus. By the addition of humus it makes cultivation and irrigation much easier and more effective. The leguminous cover crops add plant food by appropriating the nitrogen of the air and storing it up in the roots of the plants. It checks the growth in the fall and causes the wood to completely ripen up, thus preventing fall or winter injury. It prevents erosion on steep orchard lands. It keeps weeds down and catches and holds the leaves of the trees. A series of cover crops on alkali orchard lands will very materially reduce the quantity of alkali that comes to the surface.

ROYAL ANNE CHERRIES FROM SALEM, OREGON

POLK COUNTY, OREGON, APPLE ORCHARD

The most of our orchard soils while well supplied with practically all kinds of plant food are very deficient in humus. This deficiency is due to the geological formation of our soils and the climatal conditions prevailing over the dryer districts of the state. Raw sage brush land in all cases, and cleared or burned over timber lands in most instances, are practically void of humus when first prepared for cropping and if humus is not added before planting to trees it should be as soon as possible after planting. While very good returns are now being obtained from unimproved lands, yet better and more lasting results cannot help but follow the working in of several good crops of green manure or its equivalent in stable or barnyard manure.

The fall or winter injury so common in young orchards last year was due in part to the late growth of the trees, which caused them to go into winter with a full flow of sap and a lot of unmatured wood in the stems, which

was killed by the first heavy frost in the late fall or early winter. This can be readily overcome by the systematic use of cover crops which will take up the surplus water and available plant food late in the summer and early in the fall, and in this manner cause the wood and buds to mature early.

The orchard should be plowed or disked as deep as possible without injuring the tree roots and as early in the spring as the weather and nature of the soil will permit the working without injury. Immediately after plowing the surface should be put in fine tilth with a harrow or some other surface working tool, and perfect condition be maintained through the growing season or until the middle or last part of August, depending somewhat upon the soil and moisture conditions.

Just previous to the last harrowing the cover crop should be sown, either with a common grain drill or broad-casted on the surface and thoroughly disced into the soil. The drilling in of the seed with a common grain drill gave the best results, since it placed the seed down in the moist earth, permitting the immediate germination, and the getting of the crop in definite strips between the trees, thus keeping it away from the trees, which would otherwise make hoeing necessary and afford a harbor near the trees for mice and moles. Immediately after seeding the ground should be thoroughly worked down with a harrow or some other surface-working tool. While this has the disadvantage of leaving the surface smooth, yet the cover crop will serve all the urposes of rough surface and has additional advantages.

The cover crop must not be confused with the grass, alfalfa, or clover mulch which is commonly practiced in Eastern orchards, but not with satisfactory results in all cases. Since the chief reasons for tilling an orchard are to conserve the moisture and to make plant food available, it may be that certain soils in this state can profitably be cropped in this manner. However, this is not advisable unless one has abundance of water for irrigating purposes or a naturally wet soil. Even then an occasional plowing will be found to sweeten up the soil and give the trees the new life seen only in well tilled orchards.

ORCHARD IN BLOOM AT CRESWELL, OREGON

Plants that can be profitably used in the orchard as cover crops are divided into two groups or classes according to their food storing habits. The leguminous, or plants which by the aid of root bacteria take nitrogen from the air and store it up in the roots, and the non-leguminous plants, or those that are unable to appropriate the nitrogen of the air. To the first group belong such plants as clovers, vetches, peas, etc., which are commonly known as nitrogen-gatherers, while to the second group belong such plants as rye, wheat, corn, buckwheat, rape, and most of the common orchard weeds which are known as nitrogen consumers. From each of these groups crops may be selected that will survive the winter and thus serve all the purposes of a hardy cover crop.

In the selection of a cover crop it is first necessary to determine the needs of the trees and second, the physical needs of the soil. If the trees are making a poor, unsatisfactory growth, it is necessary to use a nitrogen-gathering crop in order to add nitrogen as well as humus, but if the trees are making a long, sappy growth and producing little or no fruit, it will be necessary to use a nitrogen consumer for the purpose of checking the tree growth and compelling fruit production.

The following crops have been tested as cover crops and have given the following general results:

Hairy Vetch—This plant has proved itself to be by far the most satisfacory nitrogen gathering cover crop that we can use here in the Northwest. Coming up as it does immediately after sowing and continuing to grow until cold weather sets in, and in this way forming a low, dense mat before winter which is capable of holding leaves, trash, etc., and thus preventing washing during the winter. In spring it starts into growth early and by the last of April or first of May it has produced from five to twelve tons of green manure per acre.

Spring vetch, while valuable in some places as a cover crop, did not prove so in our experiments. It requires more moisture than hairy vetch to produce the

ONE-YEAR-OLD CHERRY TREES IN NURSERY OF OREGON NURSERY CO., ORENCO, OREGON

APPLE ORCHARD AT COTTAGE GROVE, OREGON

same growth. It is not hardy enough to stand our average winter, nor does it start into growth as early in spring, so considering all features it is not a profitable plant for our purpose.

Canada field peas were grown for three years in the orchard as a cover crop and found to be of great value as a crop that would germinate quickly, produce a large amount of green material before fall and then of course kill out before spring. The peas seemed to leave the subsoil in much better condition than any other crop that we have tested, and while the tops winter killed, yet they served a valuable purpose as a nitrogen gathering and humus adding crop. The tops of the peas were so well decayed in spring that it was not necessary to plow them under, but only to work them in with a disc.

Fall rye is probably the best plant to use as a cover crop where the addition of humus and checking of growth are the main features sought; however, it adds little plant food and must be watched very closely in the spring or it will rob the trees of moisture and become too strawy to serve the purpose of a green manure. Rye has the advantage of germinating with a minimum amount of moisture; growing on land that is too hard to grow almost any other crop; producing a late fall growth and starting very early in the spring, thus permitting early plowing. The leaves of the young plants lie very closely to the ground and protect the soil somewhat better than wheat.

Winter wheat serves the purpose of a cover crop where it is impossible to secure seed rye. However, it is more difficult to get started in poor or clayey soil and does not grow as late in the fall nor start as early in the spring as rye. Since it is necessary to plow early in many sections this is a disadvantage. The wheat did not stand the winter so well as the rye.

Several other crops were tested as cover crops but were found to be of no value for this purpose, owing to some tender or peculiar habit. The nights were too cool for common buckwheat to make even a fair growth; the green aphis attacked the rape so badly as to keep it from growing, and in some instances killed it outright; the first frost kills corn, and it was impossible to get enough growth with millet to make it worth while for a cover for the soil. By the use of rye or wheat one is able to secure all that is desirable in a non-leguminous cover crop, and by using hairy vetch or Canada peas the soil may be very materially enriched as well as large quantities of humus being added to the soil.

Do not depend upon nature to supply you with a cover crop that will produce a lot of weed seed before fall, but sow something that will improve your land every day that it grows, and will not have to be fought next summer as a weed.

ORCHARD NEAR ALBANY, OREGON

HORTICULTURE AND THE AGRICULTURAL COLLEGE

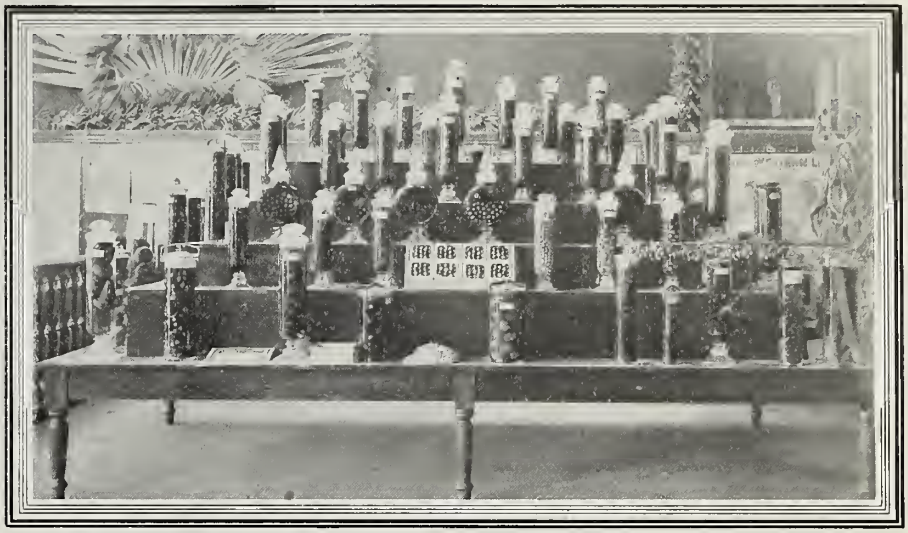
BY DR. W. J. KERR, PRESIDENT OREGON AGRICULTURAL COLLEGE, CORVALLIS, OREGON

UNDOUBTEDLY the greatest agency for agricultural and industrial development in this country are the land-grant, or agricultural and mechanical colleges. To these institutions we are indebted for the development of the science of agriculture. They also have promoted engineering education and were the first to inaugurate instruction in household technology. In the field of agriculture alone a number of the agricultural colleges have worked out different problems, any one of which is of far greater value to the nation in wealth actually saved or produced than the entire cost of all these institutions. In the great work of conserving and developing the country's resources and of training men and women for efficient service in the industries the Oregon Agricultural College is doing its part. The policy of this institution is in harmony with the spirit and policy of the best land-grant institutions of the country. Its distinctive work lies in the great field of applied science. Its courses are along the different lines of agriculture and forestry, engineering, or the mechanic arts and domestic science and art.

The function of the Agricultural College in the development of horticulture is twofold. First, through the department of research and experimentation to discover new truths and to improve the methods of applying principles already understood, thereby solving the problems encountered in horticultural practice; second, through the departments of instruction, to educate the people in the application of scientific principles.

The amount expended by the college during the present year for horticultural work, experimental and instructional, is approximately $23,000. Of this amount upwards of $18,000 is furnished by the Federal Government.

1. The experimental work is carried on by the stations at the college, and the branch stations at Union and Hermiston, and in co-operation with fruit growers in different parts of the state. The most important work includes clover crops for orchards, methods of pruning and cultivation, determination of the best varieties of different fruits for different sections, soil fertility and drainage as affecting fruit culture, the pollenation of the apple to determine the blooming period of different varieties, the transportation of pollen, mutual affinities and receptive periods of blossoms; irrigation of fruit to determine the relation of water to bud and wood development, to the chemical and mechanical condition of the soil, to the size, grade and the shipping and keeping quality of the fruit, and thereby to determine the amount of water to apply and the methods of application that will produce the best results; and an investigation of cherry tree gumnosis, apple tree anthracnose, apple scab, peach tree spot, codling moth and San Jose scale, and of the best means of controlling these pests. The investigation of pollenation is said to be the most complete investigation of the kind ever undertaken by any institution in this country. The Oregon Experiment Station was the first to test the value of the lime-sulphur spray as a preventive of apple scab, and to demonstrate its superiority in controlling this disease, as well as apple tree anthracnose, thereby removing one of the most serious difficulties encountered in apple culture in the humid portion of the Northwest.



DISPLAY TABLE IN THE SALEM, OREGON, BOARD OF TRADE ROOMS

During recent years peach fruit spot has been rapidly increasing in virulence in this state. Three years ago it ruined 75 per cent of the crop in some orchards in the vicinity of Ashland, and was largely distributed throughout the peach-growing regions in Southern Oregon. The college began investigations in 1907 to determine a means of controlling this pest. As a result of the work done during the past three seasons it has been shown that this disease can be controlled, and almost absolutely prevented at a very reasonable cost. This work by the college is entirely original and is of immense value in saving the peach crop of the state.

For instructional work there are two principal agencies: First, the regular instruction to college students in the winter short courses, the secondary course, and the degree course; second, extension work, the purpose of which is to carry instruction directly to the people by means of institutes, demonstration

IN THE ORCHARD SECTION OF THE WILLAMETTE VALLEY, OREGON

trains, itinerant schools, lectures, press articles, publications and personal correspondence.

The value of the training received by students in horticulture at the college is shown by the fact that graduates from this institution, who specialized along horticultural lines, are among the most successful men engaged in experimental and instructional work in different agricultural colleges and high schools, and as foremen and owners of many of the largest and most successful orchards in the Northwest.

The number of students who specialize in horticulture in the agricultural course at the college is rapidly increasing. There were eight graduates with degrees in horticulture in June. Many persons of mature years attend the short winter courses in horticulture at the college. These courses consist of lectures, demonstrations and practical work in different subjects relating to modern cultural methods and the control of pests, and are of incalculable value to the successful fruit grower.

There is a great demand throughout the state for information relating to every phase of horticulture, and the college is doing everything possible to meet this demand through the extension agencies. These include: (1) lectures by different members of the faculty at farmers' institutes, agricultural and fruit fairs, horticultural conventions; (2) personal visits to various orchards in which special difficulties are encountered; (3) orchard demonstrations, such as spraying for the codling moth, the apple scab, the apple tree anthracnose, and peach fruit spot; (4) work of the horticultural department in connection with demonstration trains, in which the methods of managing orchards and handling fruit are demonstrated; (5) articles on different subjects of horticulture prepared for the press by members of the station staff; (6) personal correspondence with fruitgrowers and (7) station bulletins and circulars.

VIEW OF THE WILLAMETTE VALLEY FRO
Fifteen miles southwest from Portland, Oregon, on the Southern Pacific Railroad. Frank and Rex stations on th stations will be on the property. There are no finer orchards anywhere in Oregon; 17,00

Four demonstration trains, in the work of which the Department of Horticulture participated, were run through the fruitgrowing districts during the past year, the attendance being upwards of 30,000. The itinerant school extension movement was inaugurated in this state during the past year, the first school of the kind being the apple-packing school held at Medford last September. The work of this school was so successful and popular that 40 per cent of those who applied for admission could not be accommodated.

The personal correspondence of members of the station staff with fruit-growers amounts at present to upwards of 3,000 letters a year.

The college has published twenty regular bulletins on different horticultural subjects, with a total of 168,000 copies, an aggregate of 5,863,000 pages. These bulletins have covered practically every phase of horticultural work, and have been distributed among fruit growers generally throughout the state. Their value is shown by the fact that many of them are used regularly as guides in hortiultural practice, not only in Oregon, but throughout the Northwest, while some of them are in demand in the East. The demand for some of these bulletins has been such that the editions have been soon exhausted, and it will be necessary as soon as funds are available to issue other editions.

These bulletins cover such subjects as the codling moth, prunes, apples, pears and grapes in Oregon, brown rot, apple tree anthracnose, fruit pests, walnut culture in Oregon, orchard management, apple from orchard to market, orchard survey of Wasco and Jackson Counties, pollenation of the apple, culture of small fruits, and spraying for peach fruit spot. The following are some of the most important bulletins:

Nos. 25 and 69 on the codling moth, by Professors Washburn and Cordley, respectively, give the results of the first careful study of the codling moth in the West, and laid the foundation for the spraying practice which is now general throughout the humid regions of the Pacific Coast. No. 60, on apple tree

PEAR ORCHARD VIEW FROM HILLS NEAR SALEM, OREGON

HE CHEHALEM MOUNTAIN ORCHARDS
lace. The Oregon Electric Railroad will run through these orchards for a distance of three miles, and several ees planted. Sales agents, The Crossley Company, 709 Corbett Building, Portland, Oregon.

anthracnose, by Professor Cordley, issued in 1900, gave the first accurate information regarding this disease, and outlined the spraying method which has since been demonstrated to be the most successful preventive. Anthracnose is one of the most serious orchard diseases in the western part of the state, and the value of the discovery announced in this bulletin by which this disease may be controlled is said by disinterested horticulturists to be far greater than the entire cost of maintaining the experiment station.

In 1904, just as the general public began to realize the importance of apple growing in Oregon, the college issued 16,000 copies of a bulletin, in two parts, on "The Apple in Oregon," by Professor Lake. These bulletins gave an account of the early history of the apple in this state and of the conditions requisite for successful apple growing, and considered in considerable detail such subjects as varieties, soil, site, trees, planting, pruning and cultivation. Covering the foundation work of orchard building, at a time when people were beginning to study seriously the question of apple growing, these bulletins were eagerly sought and the entire first edition was exhausted in a few weeks, and a second edition demanded. They were widely copied by the press of the Northwest, and no doubt aided very materially in giving a new impetus to the work of orchard planting.

The bulletin on the "San Jose Scale," by Professor Cordley, issued in 1906, gives an account of the work done by the Oregon Experiment Station in determining the best method of preparing lime-sulphur sprays for control of the San Jose scale.

No. 29, on "Walnut Culture in Oregon," by Professor Lewis, issued in 1906, contains full information regarding the development of the walnut industry in the state and gives instructions on the selection of the site; the propagating, grafting, planting and pruning the tree; harvesting and marketing the crop, and a discussion of the varieties best adapted to conditions in Oregon.

No. 93, on "Orchard Management," by Professor Lewis, issued in 1907, is intended to assist persons who are starting an apple orchard and considers such questions as location of the orchard, character and preparation of the soil, selection of varieties, planting and caring for the trees, cultivation and spraying.

No. 94, on "The Apple From Orchard to Market," by Professor Lewis, issued in 1907, deals in an exhaustive way with the methods of gathering, packing, selecting and marketing apples. It is copied generally in the Eastern states and is regarded as an authority on the subject.

Nos. 99 and 101, on "Orchard Surveys in Wasco and Jackson Counties," by Professor Lewis, issued in 1908, give an account of the orchard conditions as they actually exist in these counties, the purpose being to show what methods now in vogue are most successful and to gather information that might be of value as a basis for future work.

No. 104, on "The Pollenation of the Apple," by Professor Lewis, issued in 1909, gives an account of the investigations of the pollenation of the apple. As explained in this bulletin, the experiments clearly demonstrate that cross-pollenation not only produces fruitfulness, but also increases the size of the fruit and renders it more uniform in shape.

Another great service the college is rendering in behalf of horticulture is in promoting the introduction of horticulture into the common and high schools of the state, thereby bringing horticultural instruction within reach of thousands of pupils who spend their lives on the farm and who receive the only school training they ever get in the common and secondary schools.

Finally, the above indicates briefly some of the things being done by the Agricultural College for the development of horticulture. The success that shall be achieved in the future in developing the fruit interests of the state will depend upon the hearty co-operation of all the agencies that may assist in substituting for the unbusinesslike, unscientific methods that now largely prevail, up-to-date, thoroughly scientific work. In this great work you may depend upon the most hearty co-operation of the Agricultural College; it will render the greatest possible service.

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MR. C. R. GREISEN will accompany the editor, in the interests of "Better Fruit," to attend the sessions of the International Apple Shippers' Association at Niagara Falls. A number of cities will be visited in the interest of "Better Fruit," with a view to extending its influence and circulation and increasing its advertising. One of the main efforts of this trip is to become familiar with market conditions in the East, with a view to giving such publicity to the fruit industry of the Northwest as may be instrumental in increasing the demand.

TWO-YEAR-OLD CHERRY ORCHARD OF CHEHALEM VALLEY ORCHARD COMPANY, NEAR NEWBERG, OREGON

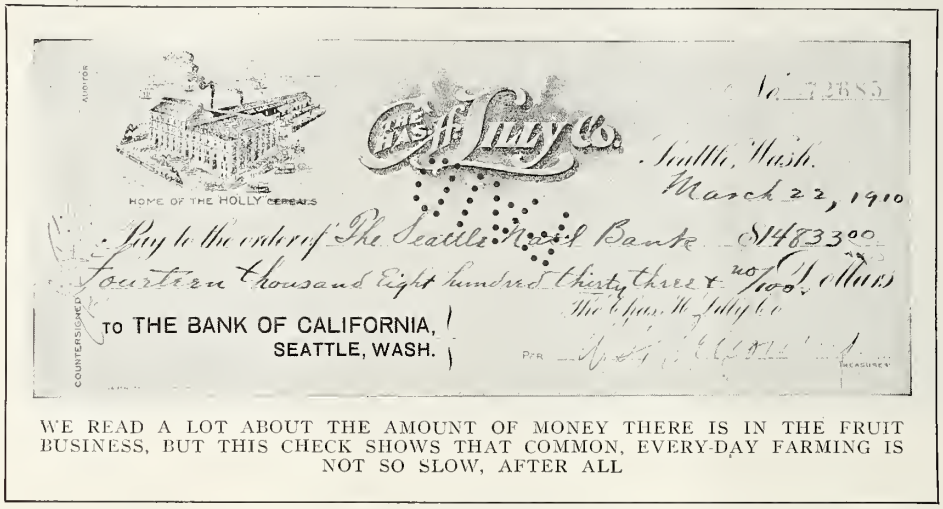
FRUIT AND VEGETABLE RAISING AROUND EUGENE

BY D. C. FREEMAN, EUGENE COMMERCIAL CLUB

THE Eugene fruit producing district is in the heart of the richest portion of the Willamette Valley. It includes the silt deposits and the best loams of the bottoms, the deltas of the McKenzie and Mohawk and the Middle and Coast forks of the Willamette, together with less noted valleys converging at this point, and it is producing a high grade of fruit. While commercial production is not far advanced from infancy, the quality has been and is improving each year. A high grade of excellence has been achieved in leading varieties, which has been demonstrated financially successful year after year, with but little variation in quantity. So excellent has been the record that the superiority of the Eugene district in several highly profitable productions is now generally conceded.

Practical demonstration and experience are sufficient guarantee behind the assertion that Lane County, in the operation of which Eugene is the metropolis and fruit exchange, possesses the highest qualities of soils for fruit and berry culture. Upon this point agricultural college experts have made practical demonstrations as well as scientific analyses. This district, owing to its convenient location, is certain to show the most remarkable development of any section within the next few years.

Very attractive records of big profits are made at Eugene year after year in the production and marketing of the Royal Anne cherry. This product has sold on the preferred markets at 3½ to 5 cents over cherries from other districts. There are a number of commercial orchards around Eugene, some of which are orchards that have been redeemed from old-time conditions, that are growing 12,000 to 20,000 pounds of cherries per acre. These are twelve-year-old trees. This section enjoys a splendid demand for the Royal Anne cherry for the preparation of the maraschino. In the green crop season it is of interest to note that the best cherry, that is sold for 10 to 15 cents per pound from fruit stands on the Coast, sells for $1.25 per pound on Broadway.



WE READ A LOT ABOUT THE AMOUNT OF MONEY THERE IS IN THE FRUIT BUSINESS, BUT THIS CHECK SHOWS THAT COMMON, EVERY-DAY FARMING IS NOT SO SLOW, AFTER ALL

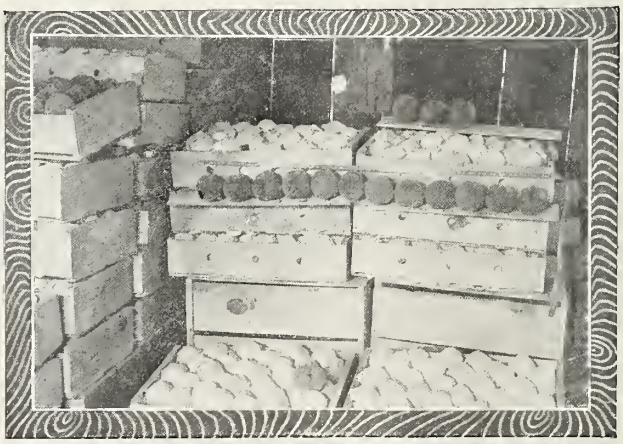
The commercial apple crop handled through the Eugene Fruit Growers' Association approximated about 10,000 boxes. Uniformly good prices are realized. The association does a good work in behalf of its members. In conjunction with the Eugene Commercial Club, it endeavors to stimulate "better products and better profits" among growers, using this continually as a slogan in encouraging meetings, procuring the best authorities to address the growers upon their work. Spitzenbergs have been largely in the lead in the marketing of apples. A few boxes of Lady apples shipped to New York sold at $8 per box, topping the market by $2 on account of color. From family orchards it is estimated that Lane County grows nearly 300,000 boxes of apples. As indicating the keen appreciation of the valley and bench lands by speculators, about 75,000 fruit trees are being planted each season. To some of the big orchard-operating syndicates must be given considerable credit for having begun the wider exploitation of Lane County's soils for fruit raising. These syndicates, which employ experts to supervise the planting of trees and laying out and caring for the ground, giving the orchards constant attention until the trees have begun to mature, are bringing the district into conspicuous attention. Large sectional farms devoted to general agricultural purposes, only partly farmed, are being cut up into small units. There is reason for the assertion that within five years the orchards around Eugene will be leading the Willamette Valley.

There are several of the oldest walnut orchards in the Willamette Valley located near Eugene and all are successfully bearing. Grafted walnut orchards bear the third year, making quite a showing. The acreage of walnuts has been largely increased within two years. On the east bank of the river, on the Turpening farm, several thousand new walnut plantings have been made. Between these the ground is cultivated and peach trees are planted as fillers. From these it is planned to obtain crops for three seasons.

There is a considerable variety of soils in the valley and sloping lands within the Eugene district. The great fertile valley of the McKenzie River basin is especially adapted for apple and pear culture, on bench lands where there is both air and soil drainage. The low foothills are adapted to the cultivation of the Concord grape, $425 per acre having been realized from bearing vineyards.

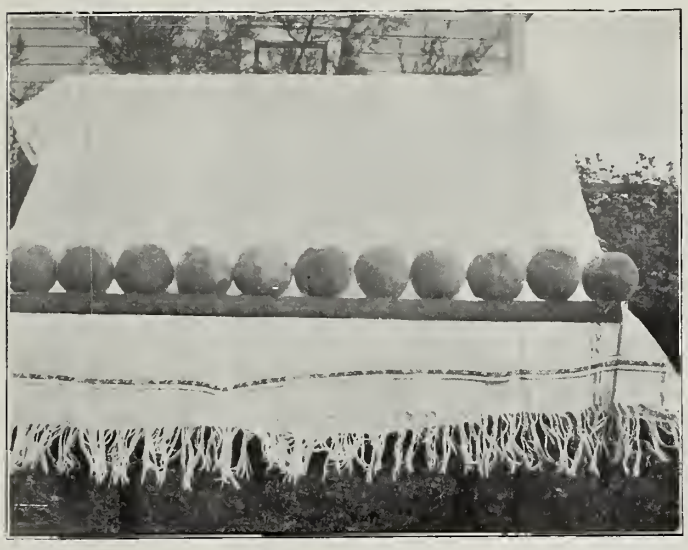
Eugene has been carrying on a campaign to reduce the large agricultural holdings and encourage the improvement of the rural population, that the ratio of sixteen families to one quarter section,

FIGURE 2. COCOON AND EMPTY PUPA CASE OF PEACH BORER
FIGURE 3. COCOON AND EMPTY PUPA CASE OF LESSER PEACH BORER
Enlarged twice.



PEACHES READY FOR MARKET, ON DENVER AND RIO GRANDE RAILROAD

instead of one family, may result. As an example of the diversity of smaller products which the soils, properly handled, will bring forth, ready reference may be had from any one of two or three hundred agriculturists who are supplying the markets with strawberries, loganberries, asparagus, grapes and vegetables of all kinds.



THE YARDSTICK IS TOO SHORT FOR ELEVEN PEACHES FROM GEORGE COOPER'S ORCHARD, THE DALLES, OREGON

Asparagus farming has proven an extremely successful departure from the customary lines. The Eugene product has attained a reputation on the best markets, and while the acreage thus far planted is limited as yet, the production of the best grades of this succulent, high priced table commodity has been brought to the canning stage. Looked upon at first as an experiment by many, it has come to be recognized as one of our best staples. The number of those engaged in asparagus raising promises to increase very materially. There is a great deal of subirrigated land along the rivers admirably adapted for the production of this crop It presents many very attractive features for the soil tiller who does not want the responsibility of large orchards without training and long experience. The asparagus from Eugene is more brittle, succulent and of larger growth and fully as prolific as found elsewhere. Two thousand dollars per acre is a fairly conservative estimate of what asparagus will yield after the roots attain a good growth. In the Sacramento Valley, California, where ninety thousand cases are put up, and where only one ton per acre was expected at the outset, two or three tons were produced, and an expert canneryman from that section who has been engaged in the work of canning at Eugene asserts that asparagus can be made to do better here, as the land is more highly adapted for the purpose. As much as $3,000 per acre is obtained from the Sacramento asparagus farms. The root crops here are not yet four years old, and the acreage is being slowly increased. After three years, with the proper handling and cultivation, these crops will yield $1,000 per acre and upwards.

The district produces the finest lot of peaches that are grown anywhere in the country. The fruit and berry growers ship from five stations in the county. The organization, of which J. S. Holt is the manager, is so conservatively and carefully administering its work that those who venture into fruit raising have every assurance of getting the best returns for their output. The association, stimulated by the campaign for "better products and better profits," took over the local cannery, which will be conducted for the benefit of the stockholders. This cannery is preparing to further branch out. Besides handling thousands of tons of cherries and hundreds of cases of peaches and prunes, as quickly as growers can be encouraged to do it, the cannery will engage in vegetable canning. The association has a constant demand for all sorts of vegetables and could take care of 5,000 acres of smaller products if they were in cultivation. Thousands of acres of both cleared and untilled land and many thousands more of fine soils for the production of great quantities of garden truck are to be had at low cost.

TEN ELBERTA PEACHES FROM GEORGE COOPER'S ORCHARD THE DALLES, OREGON

What Lane County lands are good for may be best summed up in a condensed statement of yields. These facts have been gathered by authorities from agriculturists: Prunes, $50 to $250 per acre; $250 to $500 in English walnuts per acre, from twelve-year-old trees; $425 in Concord grapes per acre; 325 to 600 bushels of onions per acre, worth $1.14 per bushel; $275 to $400 in strawberries; $200 in loganberries; 80 tons of carrots per acre, worth $7.50 per ton; $500 per acre from Royal Anne cherries, or at the rate of 12,000 pounds and upwards per acre from twelve-year-old trees; 300 to 600 bushels of potatoes per acre; three crops of alfalfa per season; $375 to $500 per acre for apples; three to four tons of alfalfa or vetch hay per acre; $400 per acre from peaches, or at the rate of 298 crates and 150 bushels to the acre.

The Fruit Growers' Association at Eugene handles about $150,000 worth of fruits every season. Of canned fruits, sixteen carloads were shipped to New York City direct last season. During the winter the shipments average one carload of barreled cherries per week. Nineteen carloads of prunes were shipped during last fall.

The Eugene Commercial Club is interested in the upbuilding of the fruit production of the Willamette Valley. It assists growers in bringing authorities to the city to give lectures and advice to growers in connection with their business. Owing to the great interest taken in fruit raising, marketing, etc., the club will answer any inquiries of a general or specific nature that may be addressed to it with reference to conditions, revenues, products, or the facts as to profits from lands in that section.

GREEN GAGE PLUMS IN COLORADO ON D. & R. G. RAILROAD

HOW TO MAKE JELLY OF YOUR UNSALABLE FRUIT

BY MRS. I. W. RUCKER, CLARKSTON, WASHINGTON

ALWAYS put the cooked fruit into a jelly bag of flannel or cheese cloth, letting it hang up six hours at least, or all day or night, but never squeeze the pulp at all if you wish clear, nice jelly. The pulp may be put through a colander and with fruit juice or fruit, make jam, butter or catsup.

Cook the fruit (for jelly) thoroughly, but do not stir much while cooking, and be very sure not to let it burn, and always cook all fruit, jelly, etc., in granite or enameled ware. If one must either have the good cooking utensils or a new hat, get the former, as the sale of the jellies, etc., if well made, would soon buy the hat.

In making any kind of jelly, cook the juice down fully one-third before putting in the sugar, then stir well; cook slowly, skimming often. When it is about done, take out a little in a saucer to cool. I use two-thirds of a cup of sugar to one cup of juice, but if it does not jelly readily I add a little more sugar. Thoroughly scald all cooking utensils before using. All jelly tumblers and glass cans should be rinsed thoroughly in water, hot as the hands can bear. Dip a clean cloth into hot water, lay in a pan or dripping pan on the back of the stove; into this place the scalded jelly tumblers to be filled, but still keep the kettle of jelly cooking, for if set off it will harden. Now comes the process that makes the nice jelly. Dip a clean white piece of cheese cloth into hot water; place it over the tumblers and dip carefully at first, with a large spoon, the boiling jelly. When through, rinse the cloth in cold water which will help make vinegar.

If the jelly does not strain readily, use a very fine wire sieve. The next day cover with paraffine, wash the outside of the glasses, put covers on, then label.

Jelly glasses and jelly tumblers can be bought cheaper early in the season.

I consider apple jelly the best. Wash the apples; in fact, wash all fruit before cooking. Put on to cook with plenty of cold water. Follow directions as given above. When nearly done, add the juice and pulp of one large lemon for six tumblers of jelly, or flavor with strawberry, or cook with cloves and cinnamon; or if wanted especially nice for meat, add white vinegar enough to give it a nice taste. When I am through pickling apples I save some of the juice for jelly, which I think is delicious; whole spices must be used and the jelly strained. For different shades or flavors use apples with peelings, or without, ripe apples, green apples, the sweetened juice left after canning apples or the juice from cans of apples opened in the winter. The shades and varieties of jellies that can be made from fruits is a revelation to one who has never tried it.

To harden pie plant, peach, apricot, nectarine jelly, add one and one-half cups strong apple juice to any three cups of the former kinds of juice. To lessen the strong taste of grape juice, quince, cranberry, plum, etc., add one cup of apple juice to three of the former kinds.

If one is too busy to make jelly when the fruit is in season, just can the juice (sweetened or unsweetened) into Mason cans, seal just as you would canned fruit, then make jelly when the hot weather is over with, or one has more time.

FRUIT EXHIBITED BY MRS. I. W. RUCKER, CLARKSTON, WASHINGTON

Cook the fruit one morning, drain, strain, set away till the next morning; then only a little time is required and the work will be done before the heat of the day begins.

The best grape jelly is made with green grapes. Sometimes I put slices of peeled lemon or whole clusters of ripe grapes (wash first) into the glass, then pour in the hot jelly; weight down with a silver fork till cool. Put a little jelly into the tumbler first so the fruit will be entirely covered. Still another way, put a little dark jelly into tumbler, set away till you make a lighter kind and so continue till the tumbler is full. It saves all the left overs too, and is very attractive.

In making jelly of berries, wash the berries, put into Mason cans, shake well till good and full, sprinkle the berries first well with sugar, then fold a clean cloth and put into a dripping pan of cold water; place the cans in these; if the pan is almost full of water so much the better. Put into a moderate oven, leaving the door open at first. Put old, clean, worn-out covers part way on each can—no rubbers. Cook till you think the juice is all cooked, but don't put any water in with the berries. Proceed as above for other jelly.

This last summer I have made 120 tumblers of jelly and only broke one tumbler because I poured the jelly too fast into the tumblers. In making jelly or putting up any kind of fruit, you will find out a whole lot of things for yourself.

After a little experience one ought to be able to make two dozen tumblers of jelly in a day, besides doing other work, depending upon the kinds and how made.

There is so much fruit not salable but which is good and clean, that can be made into jelly and saved. A ripe peach or apple that falls and is bruised will not sell, but delicious jelly can be made of the good part of it.

PICKING LOGANBERRIES NEAR NEWBERG, OREGON

PROPER TRAINING AND PRUNING OF PEACH TREES

BY PROFESSOR W. PADDOCK, EXPERIMENT STATION, COLUMBUS, OHIO

NO TREE responds as quickly to proper training and pruning as does the peach. On the other hand, it is, perhaps, the one class of trees which is most neglected in this respect. The principles of pruning the peach tree are, perhaps, more simple than that of any other tree, and it is likely that lack of courage is more often responsible for failure than anything else.

There is no definite system that can be applied to old, neglected peach trees, as each one presents an unsatisfactory problem in itself. We will, therefore, start with the young tree and describe the way it should be handled from the time it is planted.

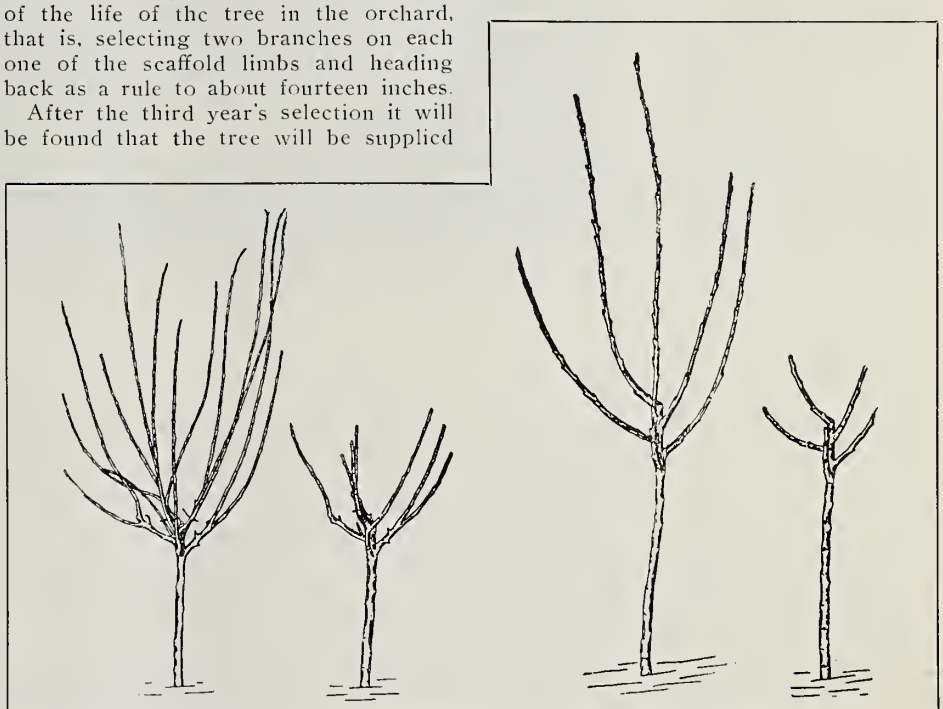
Vigorous, medium-sized trees should be selected for planting, and which are never more than one year old. The roots are pruned first, taking care to cut out all bruised roots, cutting back the long, straggly ones, and thinning where they are too thick.

Then the top should be cut back to about 18 inches in height. This will usually do away with most of the branches as they are received from the nursery, but if the tree is in good condition lateral buds are present on the portion that is left, which will produce vigorous branches the following season. Should any branches be present on this stub, they are cut back to spurs, leaving one or two buds on each. Most of these branches should be allowed to develop the following season, in order that a large leaf-bearing surface may be secured.

When pruning the following spring, the framework of the future tree is selected. This should consist of from three to five branches, which are arranged in a spiral manner around the main stem and at a considerable distance from each other. These branches are cut back to about fourteen inches in length and the rest are removed.

The following season two branches are selected on each of the scaffold limbs, one at the end and the other somewhere near the main trunk, depending upon the conditions of growth. This plan is followed throughout the first three years of the life of the tree in the orchard, that is, selecting two branches on each one of the scaffold limbs and heading back as a rule to about fourteen inches.

After the third year's selection it will be found that the tree will be supplied with a large amount of bearing surface which will be stocky and stout and will easily stand up under any load that the tree may be called upon to support. The after-pruning from this time is simple.



BEFORE AND AFTER PRUNING, ONE AND TWO YEARS

As is well known, the peach bears its fruit on lateral buds from the previous season's growth. This means one of two things, either the fruit-bearing wood must be removed and made to form where wanted, or the fruit-bearing surface will be continually getting farther and farther from the ground until eventually, as is too often the case, we have a fringe of scanty fruiting wood at the ends of long, naked branches.

When one stops to think about it he will see that it is just as easy to increase the productiveness of the peach tree by increasing its spread rather than its height, and the ideal peach tree is one in which the top conforms to a right angle in outline.

The pruner should always have in mind the idea of getting enough wood to produce a vigorous growth and removing all the superfluous bearing wood, as well as to make the tree the right shape. The model peach tree should make an annual growth of at least eighteen inches. With this amount of new wood each season, much of it will have to be removed entirely, while that remaining may be cut back to remove a portion of the fruit buds.

The removal of a portion of the fruit-bearing wood and the shortening in of the bearing laterals saves much of the tedious work of hand thinning that is now practiced by all successful fruit growers. It is difficult to say just how much new wood should be shortened in. This will depend somewhat upon the age of the tree and the

GOLD MEDALS WON BY ASHLAND COMMERCIAL CLUB FOR BEST DISPLAYS OF PEACHES

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growth it has made, but in general it is probable that at least four-fifths of the new wood can be removed entirely. This will depend upon the growth the tree is making.

Trees making a rapid growth are pretty apt to develop fruit buds only at the ends of new growths. Severe pruning in this case will remove a large portion of the bearing surface. With more mature trees the fruit buds are better distributed.

No one can hope to be successful in pruning trees of any kind if he does not understand thoroughly the bearing habits of the tree. It will pay the pruner to make a close study of his trees, and the different varieties of the same fruit, in order to become perfectly familiar with the way in which the fruit is borne.

The constant effort should be to keep the fruit-bearing surface as near the ground as possible; as it is found in practice that most of the fruit on a seven-year-old tree can be reached from the ground. A step-ladder longer than six feet should never be needed.

One of the greatest faults commonly existing in old peach trees is the absence of fruiting wood except at the ends of the topmost branches. It is just as easy to keep the entire surface of the limbs producing fruit, but this can only be done by vigorous pruning in the tops.

The center of a tree should also be filled with fruiting wood, as it is quite possible to waste fruit-bearing surface by keeping the tree too open. However, it is necessary to keep the tree from becoming too compact, as air and sunshine must not be excluded.

Something may be done with the old trees, however, to increase their usefulness. The tops of these neglected trees may be headed back rather severely providing there is new growth lower down to sustain the tree.

In cutting off these tall limbs the cut should be made just above a lateral, as it has been found in practice, cutting to bare stubs two or three inches in diameter very often results in the death of the entire branch. The heading in of these old trees should be done in a season when there is little or no fruit, and the proper time is just as soon as possible after the loss of the crop has been ascertained.

SCENE SHOWING THE TOPOGRAPHY OF THE FERTILE VALLEYS ALONG THE DES CHUTES RIVER AND ITS MANY TRIBUTARIES. THESE VALLEYS ARE IDEAL FOR FRUIT RAISING, GENERAL FARMING AND DAIRYING. OPENING UP CENTRAL OREGON FARMING, FRUIT GROWING AND LUMBERING IN WASCO, SHERMAN, CROOK, KLAMATH AND LAKE COUNTIES. TENS OF THOUSANDS OF FARM HOMES FOR THE SETTLERS. HILL AND HARRIMAN RAILROADS

Courtesy of Great Northern Railway

PRUNE GROWING INDUSTRY IN WESTERN OREGON

BY A. C. GOODRICH, OF YAMHILL COUNTY, OREGON

FOR a number of years there has been a disposition on the part of our society to discuss the apple, the walnut and the grape to the neglect of the prune. This has been a little disappointing to some of us who were much in need of information, but there have been some compensating features. All the time the prune has been a good, paying crop; yielding the grower a profit that has left a smile on his face that will not come off, and a little addition to his bank account, his investments and the luxuries that he has been able to give his family. It has eliminated the unfit in land, location and men. We know now, almost to a certainty, where the prune will thrive and where it will not; and practically all the growers who eighteen years ago planted prunes and talked prunes simply because it was the popular thing to do have gone off after some other rainbow and left the growing and marketing of prunes to the men who were most willing to give it their best thought and attention through a long series of years, till they have learned the science, or as much of it as possible, and something of the art of growing prunes and putting them on the market in the best possible shape at the least possible cost. It has eliminated the land boomer, who, because Jones has made good money out of prunes, apples, walnuts, or what not, buys, or gets an option on a large tract of land at a low price, without any regard to its suitability for the growth of the particular crop it is intended to produce, then proceeds to catch every sucker possible and make him believe that because Jones, who has spent years in the closest study of the various questions involved in the selection of the soil, the planting, pruning and cultivation of an orchard, has made a success of it that he, the sucker, can, for a mere bagatelle, say about twice the value of the land plus a payment of, say five dollars per month per acre for five years, have an orchard quite the equal of Jones'. Just now the walnut industry is infested with this pest in large numbers.

WASHINGTON COUNTY, OREGON, GRAPE VINE

But in spite of the profit we may have had and the lessons we may have learned there are left many unsolved problems yet for us. We find the brown rot some years so slight as to be of no moment, and other seasons we find it so bad as to seriously injure the quality of our fruit and to materially curtail our profits; we find a scabby growth much resembling the scab on the apple, much worse in some localities than others, and having many of the apparently causeless, intermittent habits of the brown rot. We find some trees in the best kept orchards badly injured by some disease, or condition, much resembling some form of anthracnose which at the best leaves the affected trees dwarfed on one side and cripples for life. We find that some trees will persistently bear small fruit when standing between others that as persistently bear large fruit, and we find that perhaps the largest question for us to consider and the one on which depends more of the future of the prune industry, and possibly of the apple industry as well, than any other is that of maintaining the fertility of our orchards. It is inconceivable that we can continue indefinitely taking crops of from eight to ten tons per acre from our prune orchards and still leave them with sufficient available plant food to keep up the vitality of our trees and continue to produce the large prunes which are the ones that make our largest profit. The production of the Italian, or as it is better known to the trade, the Oregon prune, has been steadily increasing for several years, not with a boom and hurrah as was the case twenty years ago, but with a steady, normal growth that has just nicely kept pace with the development of the market and, in my judgment, this production will continue to grow in the same steady, healthy way for many years to come. And just in this connection it might not be amiss to say something in answer to the question so often asked: "How long will a prune orchard live and remain productive?" In a part of what is now inside the corporate limits of the town of Yamhill, F. Hauswirth, in the spring of 1876, planted a prune orchard, thus antedating the Hidden prune orchard at Vancouver, Washington, by one year. A part of this orchard was in my care from 1894 until 1904, a period of ten years, during which there was no failure of crops, nor has there been since—in fact, there is much evidence that if the prune tree be given proper care the grower himself is likely to decay at the top before the tree does—hence to my mind the conclusion is apparent that the life of a prune orchard is limited rather by the amount of sustenance given the trees than by the mere lapse of time.

A BUNCH OF PEARS, PAYETTE, IDAHO

Largely foreign to the subject of prune growing, and apropos of nothing, except it be the welfare of succeeding generations of orchardists, I wish to enter my protest against a continuance of the plan of educating our children throughout the entire public school course along the same lines that were followed when printing was first discovered and at a period when it was not presumed there was need of educating any one except those intended for one of the so-called "learned professions" law, medicine and the clergy. The coming man in Western Oregon will be the one who is well up in one or the other of the two learned professions, dairying and fruit growing, and of the latter industry no small part will be the growing, curing and marketing of the Oregon prune.

* * *

APPLE SHOW TO BE HELD. Two million apples, or sixteen full carloads, are expected to be on view at the First Canadian National Apple Show, which is to be held in Vancouver, British Columbia, beginning October 31, and for which the first day's public canvass for funds, June 1, resulted in the collection of $9,000. Plans are now going ahead for the show with rapidity and every assurance that it will surpass any similar exhibition ever held on this continent, with the exception of the annual Spokane show.

A BRANCH OF PEACHES FROM THE YAKIMA VALLEY, WASHINGTON

TREATMENT FOR PREVENTION OF ANTHRACNOSE

BY M. O. LOWNSDALE, LAFAYETTE, OREGON

AN IMPRESSION seems to be prevalent among fruit growers of the Willamette Valley that I have denied all efficacy in the use of sprays, as suggested by Professor A. B. Cordley, for the treatment of anthracnose, and I beg space in your columns to state exactly my position on this subject.

I have never said, as has been intimated, that spraying was of no value, and that the advice of Professor Cordley in that regard was useless. Its value lies, however, in preventing infection, and not in the cure of the disease. I have said, and I now repeat, that no amount of spraying will cure the disease while it is in the host. Curative measures must be confined to the use of knife and pruning shear. The relative value of preventive and curative measures depends upon many conditions, and must be determined by the individual, his local needs being the determining factors.

In the majority of cases, where the modern orchard is under treatment, both methods should be used. At best, our preventive methods will fail in some degree, and may well be supplemented by curative measures. Personally, I believe the curative process to be the cheaper, but, for the prevention of this disease, I have probably sprayed more than any orchardist in the world, and I was the first grower to adopt this treatment. On September 19, 1895, Professor Newton B. Pierce, with whom I was then studying the disease, wrote me: "I was pleased to hear of your apparent success in controlling, by spraying with bordeaux, the apple canker on your Gravensteins. I hope the ultimate results may prove as satisfactory as the present seems to indicate. The cutting-out process, however, is also a very necessary one." Every man should think for himself in handling such propositions, and use such methods as his needs demand.

CHERRIES FROM UNION COUNTY, OREGON, COMMAND HIGHEST PRICES IN THE MARKETS, WHEREVER OFFERED

If trees are badly infected the use of the knife might be too expensive. In such cases the curative method must be given over to pruning shear, and the subsequent treatments which I will outline presently.

The impression that I have advised against all spraying in the treatment of this disease has arisen from a lack of exact attention to my language in discussing the treatment of the "old apple orchards" of the Willamette Valley. In speaking of these trees I have always said that spraying was of no value. I have said, and I repeat, that the farmer may spray these trees every day of his life, and at the end of his days the disease will still be in his orchard. But in treating these trees, any method, either curative or preventive, will fail because of inaccessibility, and for other reasons.

The best treatment would be to dig up such trees and burn them, root and branch. This radical measure, if enforced by the State Board of Horticulture when the cleaning up of the "old orchards" was first agitated, would have caused a revolution. Accordingly, a less heroic method of handling the difficult problem was devised which denied the efficacy of spraying measures in these typical "old trees," and demanded that the infected tops and branches be removed and burned as the only method of cure.

In discussing this problem I have not always emphasized the difference between the "old orchard" and the modern commercial plantings, which should be treated by modern methods. Hence, many growers and others imagine I deny all value in Professor Cordley's recommendations. This is not true. In discussing the relative value of preventive and the (so-called) curative methods, I have expressed the fear that an orchardist with a crop of apples would not find time to spray after autumn rains begin, and that many of us cannot haul spraying outfits over our lands when they have become saturated by these rains.

It is not easy to determine the proper day for treatment with a spray. Unfortunately, canker spores often germinate before autumn rains. I have frequently

ALMOND TREE IN BLOOM AT BROWNSVILLE, OREGON

found new infections well developed in August and September, and seed beds developed from the aestivating parasite are also abundant in those months. On the other hand, spores are to be found on the trees in January and perhaps later, indicating that spore germination of the fungus is spread over a long period of time.

It is also said that I deny the efficacy of Professor Cordley's recommendations because I believe the canker fungus to be a perennial parasite, and hence unconquerable except by pruning off its active principle. There is much evidence to indicate that the parasite is perennial, or at least biennial in its nature, but this presumption has not been thoroughly determined, and for many years there will probably be some question about the matter. This technical question has little interest except for the mycologist, and is of small moment to the grower. I do not care to discuss the matter, except to say that the mycelium of the fungus certainly advances beyond its stroma-bed in the living host, which it does not give indication of doing under laboratory conditions. The problem is necessarily obscure, as its determination is largely a negative proposition. One man will say, "I have found the advancing parasite;" The other will say, "I have not," and there you are.

Upon the fact that I have often found the advancing mycelium, and upon many further bits of evidence, like the appearance of at least two spore forms (one of which is the sexual spore) the second winter after infection, I have said that I believe that the life of the fungus to be at least biennial, and its control by sprays alone problematic in some degree. And yet, as early as July, 1895, I gave the growers, through The Oregonian, the advice of Professor Pierce to spray just before fall rains for preventing further infections of this disease. In June, 1895, Professor Pierce wrote me: "Yes, I now believe a summer, fall and winter treatment advisable in the first handling of apple canker, which treatments should follow a careful cutting out of diseased parts. When the trees have thus been treated one or two years, it will be safe to omit the summer and winter spraying, I think, giving the trees a very thorough treatment just before the fall rains commence, or as nearly at that time as possible."

This advice I insist should always be construed as referring to the modern orchard and not to the "old orchard" of the Willamette Valley, and is the advice I would give all up-to-date apple growers. But in giving this advice I wish it distinctly understood that I would not for a moment think of neglecting the cutting-out process—by which I mean taking off in January or February a very thin shaving of bark—simply the periderm of the cortex, leaving the rotting tissues of the remainder of the bark intact so that new fiber will form underneath. By this air-exposure the fungus is destroyed not only in the "spots," but in its advanced position beyond the surface-spot if it has reached the stage wherein such advancement is made. If the treatment is later than March 1 the advancing mycelium is not often destroyed. This treatment is the result of much experimentation, and is a modification of the advice of Professor Pierce, who was the original investigator of this disease, and who first formulated a method of treatment. As early as December 1 a crew is at work in my orchard performing this very operation, and spots so treated at that time or during the succeeding months of January and Feb-

RIPE FIGS GROWN AT SALEM, OREGON

ruary will recover absolutely, and though incurable otherwise, will present neither blotch nor rupture, and no weakening of the limb will result.

In 1909 the crop was very light in my orchard, and being desirous of solving a

BING CHERRIES, THE DALLES, OREGON
Photo by Gifford

number of problems that had vexed many of us for years, I took advantage of the shortage by carrying out an experimental program on quite an extensive scale. One of these experiments related to the conduct of foliage when sprayed throughout the summer with lime and sulphur. In the course of this experiment I treated many acres of trees, and on one plot where anthracnose had appeared in a violent form in 1908, I sprayed on the 10th and 11th of September with lime and sulphur, using a solution of one gallon to eighteen water and one gallon to sixteen water. The treatment has been remarkably successful, as very few new infections are to be found in fifteen acres of trees that were badly touched in 1909. Much of the old work was of course obliterated by shaving in the early spring, but the results obtained are beyond all expectation.

It will be observed that such a treatment is perfectly feasible every year. It will never be prevented by autumn rains as has so often happened when we attempted to follow the usual recommendations. The time for this treatment is coincident wtih the last application of arsenicals for codling moth in the Willamette Valley, and the two may well be combined. If there should be any scale on the apples the lime and sulphur of the strength mentioned will clean them off without injury and the characteristic specks of the insect will disappear in the natural coloring of the fruit.

If no scale is present the bordeaux should be used in combination with arsenate of lead. I have never used bordeaux so late in the season, but have never had much loss from rust on apples treated with the mixture. However, one could afford a small loss by rust if he could secure immunity from anthracnose. The combination of lime and sulphur with arsenate of lead did not result as well as expected. The insecticidal quality of the lead seemed to be destroyed. Professor Cordley, however, has had good success with this combination, and perhaps another year's use under the natural change of conditions would prove more favorable. In suggesting this treatment as a combination spray for codling moth and canker it is well to remember that I have had in mind only the Willamette Valley. The September treatment for moths is the most important of the season in a section whose conditions are sui generis, and where no "one spray" will suffice and "calyx" treatments are a waste of energy.

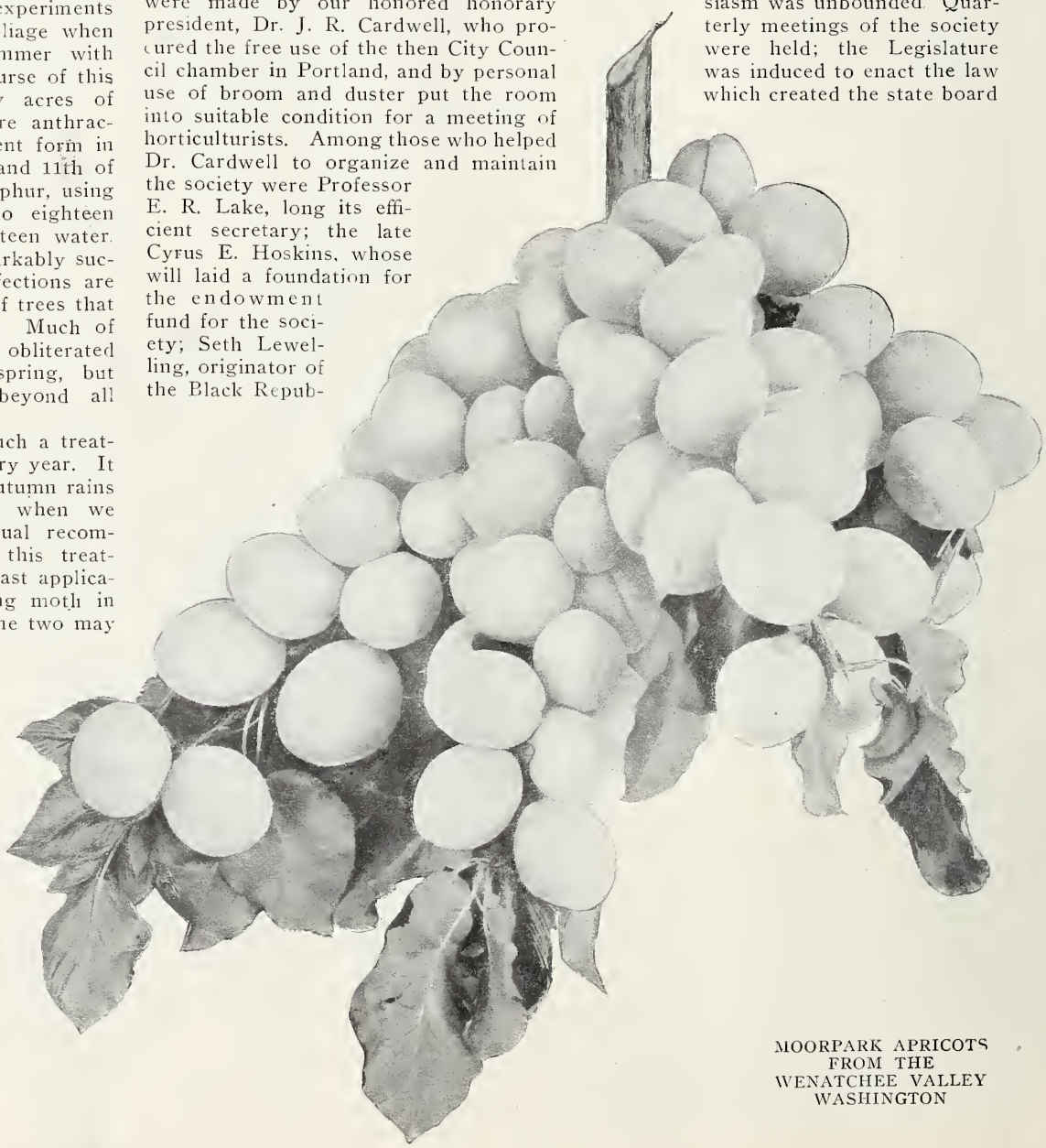
THE OREGON STATE HORTICULTURAL SOCIETY

BY H. M. WILLIAMSON, OF PORTLAND, OREGON

THE Oregon State Horticultural Society was organized on the 17th day of November, 1885. Its organization was the first step taken to check the decadence of horticulture in Oregon. The fruit growing industry of the state was then in a most discouraging condition. The volume and value of orchard fruits grown had entered upon a period of rapid decline. Insect pests and tree and fruit diseases were spreading rapidly and nearly everybody believed it was useless to try to fight them. This was especially true with regard to the apple.

The public took little interest in the founding of the society. The arrangements for holding the initial meeting were made by our honored honorary president, Dr. J. R. Cardwell, who procured the free use of the then City Council chamber in Portland, and by personal use of broom and duster put the room into suitable condition for a meeting of horticulturists. Among those who helped Dr. Cardwell to organize and maintain the society were Professor E. R. Lake, long its efficient secretary; the late Cyrus E. Hoskins, whose will laid a foundation for the endowment fund for the society; Seth Lewelling, originator of the Black Republican and Bing cherries and other valuable new fruits; J. H. Lambert, originator of the Lambert cherry, whose gift of that variety to the society was the first contribution to its endowment; Colonel Henry E. Dosch, and others of their kind—enthusists, lovers of horticulture, men of the kind who are often referred to as visionaries, impractical, cranks, and who lay the foundation for all progress but rarely reap the benefits resulting from such progress.

The membership was not large in the early history of the society, but there was a nucleus of a dozen or more men, including those I have mentioned, who were active and whose enthusiasm was unbounded. Quarterly meetings of the society were held; the Legislature was induced to enact the law which created the state board



MOORPARK APRICOTS FROM THE WENATCHEE VALLEY WASHINGTON

of horticulture; committees of the society traveled about the state investigating new fruits. Everybody gave his time and paid his own expenses.

Since that time conditions have undergone a change. It is no longer a part of the work of the society to convince the people of Oregon that fruit growing can be made profitable in this state, nor is it incumbent on it to have papers read and addresses delivered at its meetings for the sole purpose of giving information about horticulture, which can be found in standard horticultural books. Other agencies have come into existence for doing these things.

The general nature of the work of the society has not changed. There is always need of organizations to work for better things; to stimulate high ideals, and to foster and develop the best type of enthusiasm—that which seeks what is best, regardless of personal financial returns. There is also need of an organization which need never be governed by motives of policy in any action it takes. The State Horticultural Society has no occasion to avoid offending any person, however influential that person may be. From the very nature of its organization it departs from its proper functions when it takes any action which is not for the public good. Its mission is to be the animating good spirit of horticulture in Oregon; to expose mercilessly, when occasion arises, horticultural charlatanry, and to encourage every person

"BEAVER BRAND" LABEL
H. S. Gile & Co., Salem, Oregon

who is striving to bring about better methods or to originate better varieties of fruits, flowers and vegetables than we now have.

A large membership is desirable, but only when it can be obtained without following, in place of leading, popular opinion. The custom of measuring the success of an organization of this kind

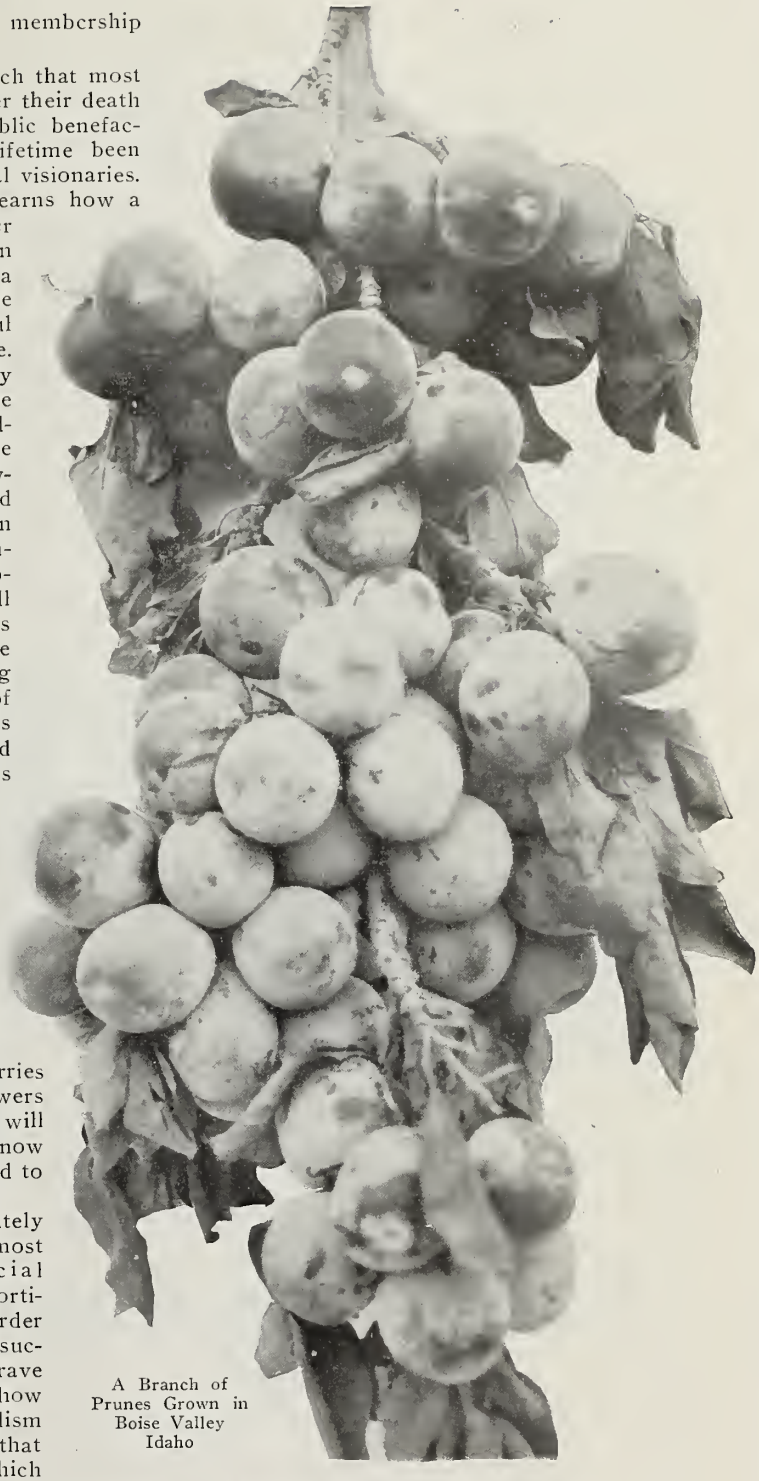
"HUNTER BRAND" LABEL
Willamette Valley Prune Association, Salem, Oregon

by the greatness of its membership is wholly wrong.

Human nature is such that most of those men who after their death are recognized as public benefactors, have in their lifetime been regarded as impractical visionaries. a man of one type learns how a thing can be done better than it has ever been done before, but it is a man of another type who makes successful use of that knowledge.

Oregon is doing very notable work in the practical line. Our leading districts in some branches of fruit growing are not surpassed and hardly equaled in thoroughness of methods and in results obtained. We may well congratulate ourselves on the progress we are making in bringing about the adoption of the best known methods of growing, packing and selling fruit. This is gratifying, but who in Oregon is now doing the work that was done in early times by Seth Lewelling and Cyrus E. Hoskins? Who will have the hardihood to say that it is impossible to originate in this state varieties of apples, pears, cherries and other fruits, flowers and vegetables which will be better than we now have and better adapted to our conditions?

Because it is absolutely necessary that the most thorough commercial methods be used in horticultural industries in order to achieve commercial success, there is always grave danger of forgetting how little pure commercialism has in common with that horticultural spirit which induces men to make it the leading object of their life work to produce a fruit or a flower which is better than its predecessors, and to do this without thought of financial reward for the work involved. Naturally those who have done most to make advancement in horticulture possible have not been known as successful men. Many of them have been decided failures from the commercial standpoint, and yet their work has enabled multitudes to achieve a success which meets the approval of the commercial critic. Such men as Ephraim Bull, Peter Gideon and Seth Lewelling have not been found successful in the art of making and keeping money, but the grapes, apples and cherries they gave to the world have added to the happiness of millions of persons and have also added millions of dollars to the value of the horticultural productions.



A Branch of Prunes Grown in Boise Valley Idaho

The state which can develop the greatest number of these true horticultural enthusiasts and which maintains the highest horticultural ideals will in the end stand highest in commercial horticulture. The State Horticultural Society is the medium for developing horticultural enthusiasm and high horticultural ideals. The natural effect of its meetings and work is to bring out and develop men who make progress possible.

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THE September or October edition of "Better Fruit" will contain an article about the International Apple Shippers' Association meeting on such points as may be of public and general interest to the fruit business.

PACK FRUIT IN CORRUGATED CARDBOARD BOXES

By A. C. Rulofson.

AT THE last Spokane Apple Show the A. C. Rulofson Company, of San Francisco, exhibited a new idea for a retail apple package. They called attention to the present methods of retail fruit dealers which appear to be worthy

of the careful consideration of the fruit grower and the consumer.

Every one has had occasion to buy at retail a dozen apples, oranges or peaches, etc., etc. They have been handed over the counter, packed in a paper bag which as a rule was too small, was not strong enough, and at best, made a very inconvenient and unsafe package for the consumer to carry home. Just imagine the result of carrying home a paper bag of this character, particularly if you were obliged to take a crowded street car, suburban train or ferry boat. If the bag does not break and spill the contents it is because you have fought to protect it from the jostling crowd, and before you get home you wish you had not made the purchase.

Most people object to carrying bundles, particularly the old style, carelessly constructed, unsightly kind, which accounts for so many manufacturers now putting their products in attractive paper boxes.

Some of the orange packers of Southern California have demonstrated that oranges packed one dozen in a crate will outsell those packed in larger boxes and will retail at from ten to twenty cents more per dozen. Many large retail groceries would not handle oranges because they would not be bothered re-packing, but when they found they could buy them put up one dozen in a crate they immediately began handling them, on account of the convenience of the package and the better price they could get for the fruit.

The Rulofson Company are now manufacturing a corrugated cardboard box which is provided with a handle, as shown in the illustration. It makes a very neat, safe and convenient package. The advantages of this box over a paper bag must be manifest to everyone. They are made in all sizes and are very cheap. They are recommended as being best adapted for retail packages, holding from one-half dozen to two dozen apples, etc. They are also making them so that four boxes will fit in a standard apple box, so that the retail dealer can sell one-fourth box of apples without repacking. This is certainly an age of cartons, and the retail dealer insists on all of his goods, wherever possible, being packed in paper boxes to avoid repacking and for sanitary reasons, as well as convenience to the consumer. Breakfast foods, raisins, soda crackers and hundreds of other articles are now sold almost exclusively in paper boxes. All manufacturers are carefully studying new methods of packing, recognizing that a good, strong, cheap, attractive box promotes the sale of their goods. We believe that if the fruit packer would give more attention to the subject of packing it would increase the consumption of the products of his orchard, and would stimulate an increased consumption without materially increasing the cost. He would be compensated for any increased expenditure by the advertising he would obtain by putting his own labels on each box, thus creating a demand for his own particular brand of fruit, which would eventually result in his being able to get better prices. At the same time, it would enable the consumer, who is the most important factor to be considered, to identify by name the particular fruit that suited him and he could ask for the same brand again. It does little good to put a label on any of the standard apple boxes because the consumer seldom, if ever, sees it. The apples are unpacked, exposed on open fruit stands, and the retail dealer very frequently is unable to tell where the apples were grown or what kind of apples they are, but if they were packed at the packing house a dozen in a box, properly labeled, the brand would go with the fruit from the packing house into the home of the consumer.

Fruit is too frequently handled under unsanitary conditions. It is exposed on open fruit stands where it collects the germ-laden dust of the street, which is not a pleasant thought and has an element of danger. Did you ever notice the untidy hands of the average retail fruit dealer? Did you ever notice the soiled towel, more often

dirty rag, with which he polishes the apples when offering them for sale? How much more attractive it would be if you knew the apples were packed under sanitary conditions in the packing house and were delivered into your hands in the original package, the contents of which had not been handled and rehandled and exposed to many other kinds of contamination. A now celebrated manufacturer conceived the idea of putting up a package of their soda crackers that would retail at five cents, and advertised this cardboard package as much as the crackers, claiming that it was always sanitary, neat and clean, and the contents preserved. Other manufacturers thought it was a foolish idea and too expensive, but experience demonstrated their mistake and today every soda manufacturer in the United States is putting his crackers up in the same kind of a package, but unfortunately for them, they let the manufacturer with the original idea get a very great start and it is difficult to overtake him.

A. C. Rulofson Company, Monadnock Building, San Francisco, will be pleased to furnish free samples of these boxes, together with prices, etc. In writing, please be particular to state the dimensions of the package wanted.

Tarred Orchard Yarn

Best article yet found for supporting heavy laden fruit trees. Does not interfere with cultivation; will not chafe limbs like props. Growers everywhere appreciate its value and advantages.

Not too late. Dealers will supply your order at once

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SALT—Is an absolute **necessity** to all **animal life.** An animal, to be **thrifty** and **contented**, must have access to it as nature demands—no more, no less.

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Cleanliness—the first requisite of health—forbids its being fed in the manger or on the ground.

Economy requires that it be fed in the form of a "**lick,**" and not in fine grains on the ground or in **the feed.**

The feeding of salt mixed with rations is pernicious and wasteful, as it is impossible to gauge the individual requirements, and if it is insufficient the animal will eat too much in order to get the salt, and if excessive will neglect the feed on that account.

The **Leslie Salt Lick** (patent applied for) provides for all of these conditions. It is a five-pound square brick as smooth and firm as marble and is provided with a wire hanger, so that it can be easily nailed up over the manger, on the sheltered side of fences or trees in the pasture, out of the dirt and readily accessible to the stock, that each can get its individual requirements—no more no less—in a cleanly, wholesome manner. While the first cost may be a little more than common "stock" or "lump" salt, the convenience and freedom from waste make the "**Leslie Lick**" the most economical in the end.

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BETTER FRUIT

HOOD RIVER, OREGON

OFFICIAL ORGAN OF
THE NORTHWEST FRUIT GROWERS' ASSOCIATION

A MONTHLY ILLUSTRATED MAGAZINE
PUBLISHED IN THE INTEREST OF MODERN
FRUIT GROWING AND MARKETING

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Entered as second-class matter December 27, 1906, at the Post Office at Hood River, Oregon, under Act of Congress of March 3, 1879.

THE WILLAMETTE VALLEY

THE earliest settlers in the Northwest came across the plains, and on account of the fertility and beauty of the Willamette Valley many availed themselves of the favorable opportunities in taking up land, each settler who wanted it being given a donation lan l claim of 320 acres, and if married his wife would also receive another 320 acres. Most of these early farmers for many years used their farms for the purpose of growing hay or grain, and it was in the Willammette Valley that the first fruit trees, mostly home orchards, were set that were planted in the Northwest, and the reputation made by the Willamette Valley for its apples was back in the early 50's, creating a great deal of comment even in those early days. The apples were so fine that they were shipped in large quantities by steamers to San Francisco, bringing fabulous prices. The Willamette Valley has always been a great fruit country, and in this valley, too, were propagated the two best cherries that have ever been grown, the Bing and Lambert. The Lambert was named after the propagator and the Bing was named after a Chinaman who had been a faithful servant of his employer for many years. On account of the profits in hay and grain and lack of demand for apples, due principally to lack of facilities for handling and the knowledge of how to handle them commercially, the early orchards were more or less neglected. Since the East and Europe are beginning to appreciate the fact that the Northwest grows the finest fruit, especially apples, that is grown anywhere in the world, the interest in the orchard industry is awakening with wonderful rapidity and is rapidly increasing in proportion to the increased demand from European cities. The demand and desire to obtain fruit from the Northwest is so great that the orchard business is becoming one of the most profitable of our many industries. The Willamette Valley, though at first slow in awakening, is now realizing the present condition and is taking advantage of its opportunities, and these large farms of 640 acres are daily being divided into ten, twenty and thirty-acre tracts and set to orchards, and the future would seem to indicate the Willamette Valley coming into its own as one of the greatest fruit producing sections of the Northwest.

This number of "Better Fruit" is issued to show in a modest and conservative way, as well as we are able, what is being done in the Willamette Valley, and to some extent to indicate its possibilities, and it is our hope that the readers of "Better Fruit" will find the information contained interesting, instructing and valuable.

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THE editor of "Better Fruit" has been invited to attend the session of the International Apple Shippers' Association, to be held at Niagara Falls August 3, 4 and 5, to make an address covering the fruit industry of the Northwest, apple packing and grading, and the future of the apple industry. About five hundred buyers from all the principal cities of the country will be in attendance at this meeting, as well as several hundred people who are not buyers, but who are interested in the fruit industry in various ways, are usually in attendance at these meetings. The editor hopes that his remarks may serve to promote a more friendly understanding between the Eastern buyer and the grower of the Northwest.

New York, June 30.

Mr. E. H. Shepard,
Hood River, Oregon:

Your June number is another beauty. Mail us an extra hundred copies. Somewhere somebody may publish a better fruit paper than you do, but we have never seen it. You certainly are doing more for the uplift of the fruit trade than any other man. We congratulate you and feel that we are indebted to you.

Steinhardt & Kelly.

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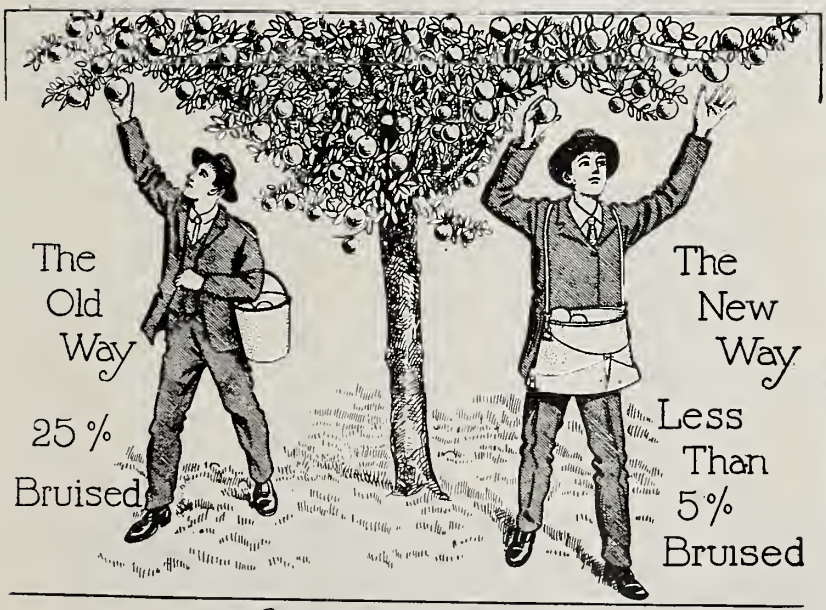

OGBURN'S

Fruit - Gathering Vessels

Prevention from bruising and time saved by the use of these vessels in handling of fruits (such as apples, pears, peaches, oranges and tomatoes) means a great saving to the grower—money saved is money made. This is accomplished by both hands being free to use in picking, and the removable canvas bottom allowing the vessels to be emptied without jarring or bruising the fruit, as shown in adjoining illustrations.

DELICIOUS FRUIT FARM
Harry Shotwell, Proprietor
Wenatchee, Washington, March 21, 1910.

Messrs. Wells & Morris, Wenatchee, Washington.

Gentlemen: In answer to your inquiry will say that the sample fruit picking buckets, patented by J. H. Ogburn, and purchased from you last fall, are a complete success and will be of great value to the fruit growers. The buckets, having canvas trap bottom, avoids bruising fruit when picking and emptying in the box, two buckets just filling a box. I cannot say too much for the bucket, as it now fills a long needed want. Every fruit grower should keep a supply on hand. They are sure a money saver.

Yours truly,
Harry I. Shotwell.

WENATCHEE VALLEY FRUIT GROWERS ASSOCIATION
Wenatchee, Washington, March 19, 1910.

Mr. J. H. Ogburn, Wenatchee, Washington.

Dear Sir: Regarding the new fruit picking pail which you are putting on the market, permit me to say that I regard it as eminently valuable. You have invented an article that will practically do away with the bruises usually incident to fruit picking. One great drawback to the fruit industry is the early decay of the fruit due to rough handling while picking. Bruises, however slight, shorten the life of the fruit. The use of your invention will practically do away with all the loss in this respect.

Yours very truly,
E. T. Balch, Secretary,
Wenatchee Fruit Growers Association.

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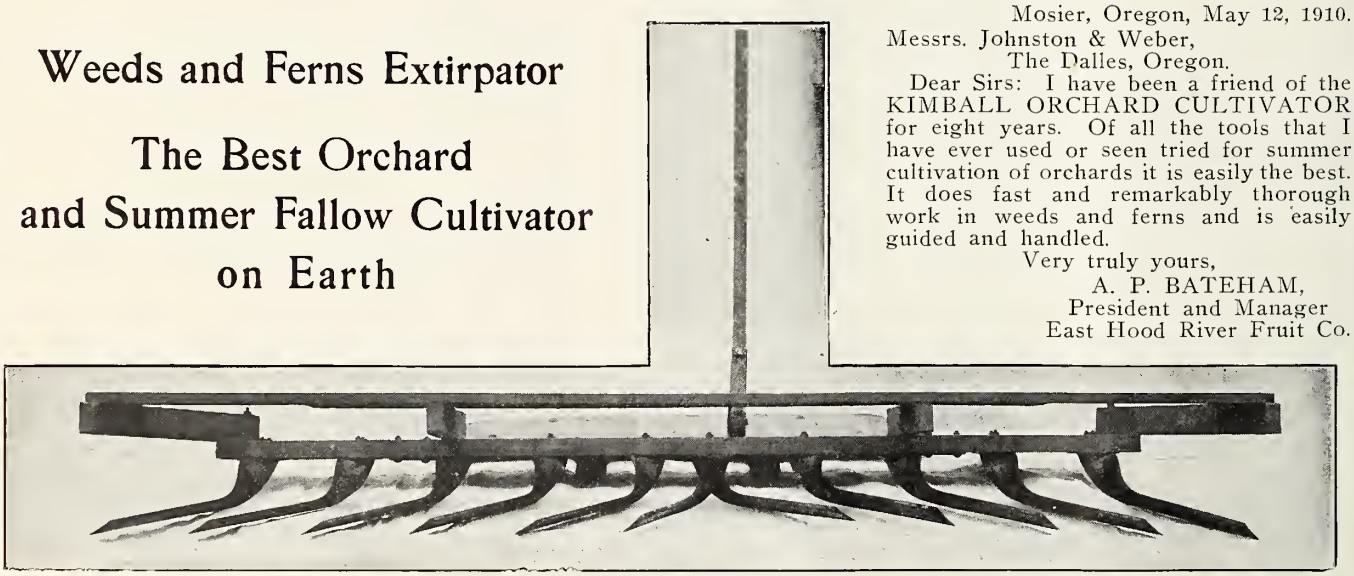
KIMBALL CULTIVATOR

Weeds and Ferns Extirpator

The Best Orchard and Summer Fallow Cultivator on Earth

Mosier, Oregon, May 12, 1910.
Messrs. Johnston & Weber,
The Dalles, Oregon.
Dear Sirs: I have been a friend of the KIMBALL ORCHARD CULTIVATOR for eight years. Of all the tools that I have ever used or seen tried for summer cultivation of orchards it is easily the best. It does fast and remarkably thorough work in weeds and ferns and is easily guided and handled.
Very truly yours,
A. P. BATEHAM,
President and Manager
East Hood River Fruit Co.



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The land is offered for sale in tracts of five acres or more at $250 per acre, planted and cared for for one year, and on easy payments, viz: One-fifth down and two per cent per month on the balance until paid for.

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Write us and let us give you facts about our section and also show you that we are selling our land for just half what others are charging. You read "Better Fruit," so you know what the returns are from a first-class apple tract.

Oregon Apple Orchards Co.

Portland, Oregon

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LANE COUNTY, OREGON

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Asparagus, per acre	$700 to $1,200	Pears, per acre	$400 to $700
Apples, per acre	400 to 800	Walnuts, per acre	300 to 500
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Peaches, per acre	300 to 600	Loganberries, per acre	250 to 300
Concord grapes, per acre	300 to 400	Vegetables, per acre	500 to 650

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THE WALNUT GROWING INDUSTRY IN OREGON

BY THOMAS PRINCE, DUNDEE, OREGON

I WAS one of the first to interest myself in this industry in Oregon. I only wish that I could do this justice, as so many are already interested and thinking of engaging in this enterprise, and it would seem I should be able to give some valuable information, but I feel that I can only give you our experience and perhaps a few minor points which can hardly be questioned.

For a good many years there has been in this Northwest a few walnut trees planted out and walnuts grown, and it seems to me strange, as these few trees are bearing good quality and quantity of walnuts, that no one had gone into this branch of horticulture to any extent. Some of us who are interested in prunes believed a mistake had been made and too many prune trees had been grown to the acre, 120 and upwards. We commenced about twelve years ago to thin them out, replacing the prunes by putting in walnuts every other tree in alternate rows, one-fourth walnuts or thirty trees to the acre.

We believe by so doing that we have not very much decreased our prune product. We also planted out twenty-seven acres by themselves and will say the walnuts with the prunes have made very near, if not equal growth with those planted by themselves, although for the first four years we raised crops between the walnuts.

They commenced to bear at seven years of age, and since then steadily increasing in amount. This season, from a little over fifty acres bearing trees we had at least twelve tons of walnuts. One cannot count on net profits until trees are eight years, at least, and perhaps nine years of age. We have good soil and suitable location, and have given our trees fairly good cultivation. No doubt

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The Bitter Root Valley is larger than Hood River, Yakima and Wenatchee combined, and within five years will have the greatest acreage in apple orchards of any valley in the world.

The Bitter Root Valley today is better known in the great cities of the East and is attracting more Eastern capital than any other fruit valley in the Pacific Northwest.

It is many hours nearer Eastern markets than other valleys and its transportation facilities are good and growing better, owing to keen competition between the Northern Pacific and C. M. & St. P. roads.

It is a long-tried fruit region where there have been no crop failures.

All standard apples are fancy apples and fit for export trade. The national reputation of the "McIntosh Red" is firmly established.

The Bitter Root Valley is without question the most beautiful and healthful fruit region in the United States. General living conditions are excellent and the valley is attracting a most desirable class of settlers and investors from the East and Middle West.

Land values have doubled in the past eighteen months and yet the great development of the valley has only fairly begun.

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Tracts of irrigated land, improved or unimproved, from ten to one thousand acres, in any part of the Bitter Root Valley. All water rights on land offered for sale by us will stand the strictest investigation.

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MY PLAN

The plan under which you may become a part owner in our commercial orchard will, I am sure, instantly appeal to you. The financial side has been brought within your reach.

FREE

I have written a book entitled, **"The Apple King,"** and I have 500 copies of it laid aside for "Better Fruit" readers. Send for your copy today. Then give the money making opportunity it tells about your careful consideration.

A car of apples from my own orchard won the grand sweepstakes prize at the National Apple Show, and I now invite you and other readers of "Better Fruit" to join me in the ownership and development of what I hope to make the most profitable orchard in Rogue River Valley.

A. B. Ironson

"APPLE KING OF THE WORLD"

Rogue River Commercial Orchard Company
MEDFORD, OREGON

Gentlemen:
Please send me the book written by Mr. Ironson.

Name .....

Address .....

.....

some will be able to show better results and probably some not as good. We set out mostly seedling trees—the French varieties—Mayette, Fanquette, Preparturians and Parisienne. Our Corvallis friends and many others who have given this subject much thought, recommended planting out grafted, or budded trees. I can only state our seedling trees produce a good commercial product. If it was thought best to grow the grafted trees, would it not be as well to wait until seedling trees were four years of age and commence to branch, then limb graft, instead of putting out nursery grafted trees, as I think it will be found the seedling makes a more vigorous growing tree, which will produce a quantity of nuts quicker than the grafted tree? That has been our experience. If grafted trees, the question might arise whether to graft on the black walnut or French stock, and if black walnut whether California black or Eastern black. There is, and no doubt will be, a great deal of theory which is all very well; at the same time we will need some practical experience to vary this theory. There are one or two drawbacks which I want to call your attention to: First, in Western Oregon, the last half of October and early half of November, about the time our walnuts ripen, we are liable to have a great deal of rain, which makes harvest disagreeable and difficult. The nuts, if left on the ground too long, discolor, as has been the case this season, making them less attractive and we have to dispose of them at low price. Also, we cannot depend upon the sun to dry, and if any considerable amount is grown, drying capacty will have to be provided. Second, the blight. This they have in all nut-bearing countries; also, we have it here; some years it is worse than others. It is not thought to be a fungus disease, but weather conditions.

Sudden changes of temperature and, it is thought, too much damp weather is unfavorable; whether we will be more or less favored than California growers remains to be seen. As near as I can learn, the blight affects their trees more than it does ours, killing the tender growth. I certainly think the walnut blight the worst drawback to the suc-

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Has the Largest Orchard in the State of Oregon

This orchard was planted this spring. George I. Sargent, of Hood River, recommended by the editor of "Better Fruit," superintended the planting.

W. K. Newell, president of the State Board of Horticulture, examined and reported on the land: "* * * I can unhesitatingly recommend the lands you have for orchard planting." The trees are all one-year-old trees grafted on two-year-old roots.

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Mrs. Zelma Snell, Plymouth, Wisconsin
W. J. Sullivan, 5037 Evans Avenue, Chicago, Illinois
Gertie Knerr, 487 Taylor Street, Portland, Oregon

These people, after having examined all favorable localities in Oregon, purchased from ten to twenty acres from us. Write and ask their unprejudiced opinion.

The orchard consists of five hundred acres planted to Spitzenberg and Yellow Newtown apples, divided into ten-acre tracts and sold on easy terms.

CHEHALEM VALLEY ORCHARD COMPANY

405-6 LUMBERMENS BUILDING PORTLAND, OREGON

cess of this industry. We understand the Government is studying this condition, and no doubt our experiment stations will be of profit to us.

There are also some advantages in walnut culture over other crops. They require less care and anxiety to harvest and dispose of. The question of labor is largely eliminated.

I believe there will be no failure of crops. Since our trees have come into bearing we have had an increased quantity of walnuts from year to year; some years no doubt will be more favorable than others. Although it takes some time before the trees begin to give returns, they will continue to increase their product for many, many years and prove productive, while with fruit trees after a few years they commence to go behind, and have to be replaced.

If any considerable quantity should be grown we cannot expect the present high prices. No doubt the price will be governed by supply and demand, but as long as our importations of walnuts continue so large we hardly need fear overproduction and unremunerative prices. If the time comes when supply will force the price to, say half the present price, the increased demand will, no doubt, take any surplus, as at present this high price is beyond the reach of many for their use to any extent.

Then, there are by-products. We had an inquiry this season for two carloads, picked green, to be used for pickles. Annually large quantities of pickled walnuts are imported, and prices at which they are sold are very high. They are also used for dyeing purposes, giving a shade difficult to obtain except with walnuts. The confectioners, bakers and vegetarians are using more and more. There is, and going to be, continued demand, and walnut growing in Oregon, and, in fact, the whole Northwest, will, we believe, increase in volume and prove to be one of our leading crops.

J. M. Schmeltzer, Secretary

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Hood River, Oregon

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DROPPING OF FRUIT WILL NOT HURT THE CROP

BY PROFESSOR R. E. TRUMBLE

INASMUCH as there has been considerable comment in regard to the dropping of fruit from the trees, R. E. Trumble, professor of horticulture at the Wenatchee High School, has made a thorough investigation of this matter and his conclusions follow:

"A number of fruit growers have felt some alarm over the 'large apple blossom drop' this spring. It should be emphasized that while this blossom dropping is not great enough to decrease the crop, it is great enough to teach us that something should be done to prevent its occurring again in the future. This apple blossom drop is due largely to three causes:

"First, many of the young terminal shoots set fruit this year. This is unusual, and most of the blossoms normally fall from these young shoots.

"Second, unfavorable wind conditions during the blossoming period reduced the wind pollenation to a minimum. There was very little wind during the first part of the blossoming period, and the wind blew hard one day and blew most all the blossoms from the trees.

"Third, we have very inadequate bee pollenation in this valley, because we have very few bees compared with the great number of trees. When going through the orchards during blossoming time I have often found only two or three bees in a five-acre orchard. While there are over sixty different insects that cross pollenate apples, these insects are not here in numbers great enough to cross pollenate the great numbers of bearing trees we have. Another thing that made bee pollination difficult this spring was the fact that all the varieties of apples blossomed so nearly at the same time. This is unusual; ordinarily there is considerable variation in the time of blooming among the varieties, and even among the blossoms of the same kind of varieties. The fact that this year the blossoms came out about the same time gave the bees too much work in too short a time.

"We cannot control the first two causes of this apple blossom dropping, but the cross pollenation by bees is entirely within our control. Harry Clark and I have collected the following data, which shows the great value of bees to the orchard, as cross pollenizing agents. Counts were made on three varieties of apple trees near the bee hives (thirty to 100 yards). For comparison, counts were made on the same varieties of trees where no bee hives were near, to determine the percentage of blossoms and fruit spurs that failed to set fruit and the number that set fruit with and without bees. Only spurs that bore blossoms this year were counted.

"Note that where the bee hives were near, only 7 per cent of the fruit spurs failed on the average; while where no hives were near, 49 per cent of the fruit spurs that normally set three or more apples, failed; i. e., did not set a single apple.

"In one count 77 per cent of the fruit spurs failed; this is altogether too many. It reduces the crop, and does not give the fruit grower a chance to properly

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Fifteen to seventeen miles south of that wonderful city of Portland, Oregon, are located the select apple orchards of the Chehalem Mountain country.

Oregon is the natural home of the finest apples grown anywhere in the world. This particular section of Oregon seems to have been more highly favored than other parts. Every condition existing in the Chehalem Mountain orchard tract is ideal for the growing of perfect fruit in abundance.

Oregon apples always bring fancy prices. The demand is far in excess of the supply. New York and London take nearly the entire Oregon crop.

A ten-acre tract will easily net the owner $5,000 or more a year. The work of taking care of an orchard is easy and interesting. The climate of Oregon is really ideal. It never gets real hot or real cold, as it does in the Eastern country. There is no suffering from the extremes of temperature.

We have one thousand acres planted to the finest grades of the best paying commercial varieties of apples. The whole thousand acres are divided into five and ten-acre tracts. The trees are young and will not be in bearing for three years. You can take care of them yourself till bearing time, or we will do it for you, taking as our pay the fruit the orchards bear during the first four years.

We will sell you a five or a ten-acre tract already planted. The terms of sale are so liberal and easy that by the time you have your orchard half paid for, your apple crop will pay for the rest and show a big margin of profit beside. By planting garden truck between the rows of trees you can make the orchard pay for itself from the very start.

Our space is too limited to go into detail in a magazine announcement like this, so we have prepared a valuable book on the growing of apples. It tells how fortunes are being made by all who enter into the business right.

We have also made a map of the Willamette Valley for fifty miles radius of Portland. The book and the map we will be glad to send free to any one interested. Clip the coupon, fill in your name and address and mail it to us. It can be the start of independence and prosperity for you.

The Crossley Company

761-2 Corbett Building PORTLAND, OREGON

References: U. S. National Bank, Portland; U. S. National Bank, Newberg, Oregon; State Board of Horticulture, Portland; any bank or prominent business man of Portland.

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distribute the apples on the trees by thinning.

"Our conclusion is that to prevent such difficulties in the future we must get bees. The common honey bee is the best insect pollenizer on earth. They come out earlier in the morning and work later in the evening, and work under more unfavorable weather conditions than any other insect. From my work on bees I have calculated that one honey bee is capable of, and in all probability does often cross pollenate over 16,000 apple blossoms in a day. But during the blossom period there are so many blossoms that the bees do not go far from the hives, so we need hives all through the orchards.

"W. T. Clark's plan of grafting other varieties on one branch of each tree on the windward side, is a very wise provision, and a great aid to bee and wind pollenation, where trees are planted in solid blocks.

"It is true that the arsenate of lead kills a good many bees at the time of the first spraying, but it must be remembered that there are thousands of brood cells in the hives ready to bring forth new bees, which take the places of those that were killed.

"If the bees are well cared for the loss from poisoning will not be serious enough to greatly injure the hives. It will save bees to wait until most all the blossoms have fallen before you apply the first spraying.

"You should see twenty to forty bees buzzing around every apple tree during blossoming time. This will insure the best kind of cross pollenation and you will not need to depend on wind and other things that often fail."

NEAR BEE HIVES (30 TO 100 YARDS)

Turner Orchard—	*Winesap*	*Rome Beauty*	*Jonathan*	*Average*
Per cent of fruit spurs that failed to set fruit	4	11	6	7
Per cent of fruit spurs with one or more apples	96	89	94	93
Per cent of blossoms that set fruit	64	82	72	73
Per cent of blossoms that fell	36	18	28	27

NO BEE HIVES NEAR

Clark Orchard—	*Winesap*	*Rome Beauty*	**Winesap*	*Average*
Per cent of fruit spurs that failed to set fruit	77	34	37	49
Per cent of fruit spurs with one or more apples	23	60	63	51
Per cent of blossoms that set fruit	20	37	36	31
Per cent of blossoms that fell	80	63	64	69

* These Winesaps were in the Turner orchard.

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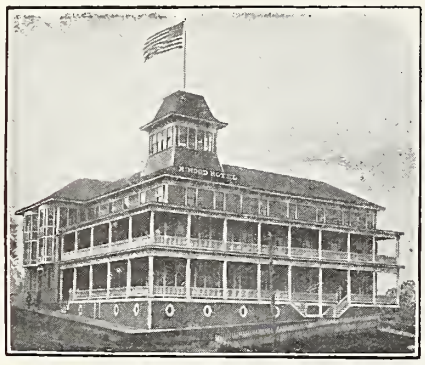

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NECESSITY OF SUMMER PRUNING OF FRUIT TREES

BY C. L. SMITH, SPOKANE, WASHINGTON

SUMMER pruning seems to be one of the neglected horticultural topics. A careful review of the proceedings of horticultural meetings indicate that when pruning is discussed, about ninety-nine times out of a hundred, it refers to winter pruning. An investigation of the methods in practice also indicates that in actual practice about the same ratio holds good. This, too, when every recognized authority on the subject of pruning says: "Prune in winter to produce wood growth and prune in summer to produce fruit." When we realize that a large percentage of the wood growth stimulated by the winter pruning is cut off and burned, while the fruit produced by judicious summer pruning finds a market at from one to five cents per pound, it would seem that either the theory or practice is wrong. That the theory is correct has been demonstrated many times and is seldom questioned. That the practice is wrong is indicated by the very unsatisfactory results usually obtained. Then, why so much winter pruning and so little summer pruning? I have asked the question many times and the answers have been fairly uniform: "Because I have time to do the work in the winter." In my work among the orchardists I have endeavored to emphasize this rule: "Until the young orchard reaches bearing age do severe pruning in the month of March, for the purpose of shaping the tree and stimulating wood growth. Thereafter, prune sparingly in winter; leaving the major portion of the pruning to be done between the 25th of July and the 15th of August." This pruning, however, should be supplemented by considerable punching at intervals between June 1 and July 1. In actual practice I find that, if during the second, third, fourth and fifth years from planting the tree is properly pruned and trained, the energy of the tree thereafter will be largely expended in the production of valuable fruit instead of worthless wood. Another factor that I find of considerable importance in this connection is the proper thinning of the fruit; a practice that if intelligently applied in connection with summer pruning and proper cultivation will cause the tree to produce a fair crop of fruit annually instead of a big crop one year and nothing the next.

I find that sprouts starting from the main branches will ordinarily stop growing if the end is pinched or clipped off when they are three to six inches long. If, however, they start to grow again, pinch them a second time and that will discourage the effort to go on making wood, and in one or two years they will develop a nice cluster of fruit buds in the place where they are most valuable. Where such sprouts have been overlooked in the June pinching, then at the July or August pruning cut them back to six inches. Never close up the parent stem. The modification of this rule would be, if two or more sprouts start from the same place, then pinch or cut the one strongest to a six-inch stub and cut the others close up.

Avoid long, bare branches, securing as far as practical, an even distribution of

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C. F. LANSING SALEM, OREGON

fruit spurs from base to top; this can only be done by judicious summer pruning. The cutting away of foliage, buds and immature wood from the tops of the branches in July or August tends to the production and better maturing of buds near the base.

In renovating an old orchard where it is necessary to remove a large portion of the top, of course the first work should be done in winter; then to secure the most satisfactory results, follow this up with June pinching and August pruning. This method diverts the energy of the tree to the production of fruit, a much more valuable service than that of producing worthless brush that must be removed at a great outlay of time, labor and patience.

Emphasize the fact that a branch should never be cut unless there is some good and sufficient reason for it.

When a limb has been cut off and two or more shoots start—and I have seen a dozen—rub or cut off all but one. The quicker this is done after they start to grow the better. We have all seen the results of negligence in the great tufts or clusters, like an old-fashioned brush-broom. I have found the best thing to do with such tufts is to cut below the tufts at the first good bud or branch.

I firmly believe that, in the average orchard, one hour of intelligent pruning during the first week in August would bring more profitable results than five hours of the usual cutting and slashing in winter.

Inasmuch as we are generally agreed that "we prune in summer to produce fruit and in winter to produce wood," and the average orchard has too much wood and too little fruit, would it not be well for the average man who has no better reason for severe winter pruning than the fact that he has nothing else to do at that time, to stop and inquire whether it will pay to take time in summer?

Just do a little more thinking, then experiment a little on your own account, and I believe you will agree with me that there is both sense and profit in growing fruit instead of brush.

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We are always pleased to extend courteous assistance to new residents of Hood River and the Hood River Valley by advising them regarding any local conditions within our knowledge, and we afford every convenience for the transaction of their financial matters. New accounts are respectfully and cordially invited, and we guarantee satisfaction. Savings department in connection.

HOOD RIVER BANKING AND TRUST COMPANY

HOOD RIVER, OREGON

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"Northwest" Trees are Best

North Yakima, Washington
July, 1910

STORAGE CELLAR. Our new modern cellar will enable us to make shipments to Southern Oregon and California in January and February, if desired. We can keep our stock in much better condition in our cellar than can be done by "heeling" out. Trees "heeled" out over winter are in danger of the tops being killed and the roots injured. By keeping them in a well constructed cellar this danger is avoided.

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Growers of Standard Sorts and Commercial Varieties
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Regardless of your wants, you cannot afford to place your order until you hear from us. Write today.
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Capital paid up, $100,000
WE HAVE NO AGENTS
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GET our prices and save money. Trees first-class. We lead, others follow. Have several hundred thousand finest peach trees ever grown in the West. Cherry, pear and apple in numbers that foot up millions. If planted in a line would make over three rows, the usual distance of planting, from Seattle to New York city.
WRITE US AND MENTION THIS PAPER
Main Office
SUNNYSIDE, WASHINGTON

METHODS USED IN FIGHTING THE PEACH YELLOWS

BY EDWARD HUTCHINS, FENNVILLE, MICHIGAN

THERE has been considerable said of late about the spread of the yellows among the peach orchards of the state and perhaps some of the writer's experience with this disease may be of interest to those who are now troubled with it or who may be apprehensive of its approach. It was in the later years of the '80's and '90's that the disease was prevalent in Western Allegan County, and in some instances destroyed whole orchards. At that time the writer had charge of a fruit farm of which perhaps seventy or eighty acres were in peaches. The yellows had been in the orchards a few years previous to his occupancy and in some places considerable openings had been made by the removal of diseased trees. This farm was in a corner where four townships meet, and in two of them no yellows commissioners had been appointed, or, if this had been done, the appointees had lacked the equipment of the requisite "sand" to enable them to enforce the law. As seems to have been common in such cases, some were of the opinion that the "yellows ain't ketchin'," and vigorously opposed any interference with their orchards. Some such individuals were in the adjoining townships and not far from the farm in question, and as a result the disease gained such headway that in three years' time the whole of the peach orchards on this farm went out with it.

The campaign that we waged against the disease during those years was something memorable. On a given day each week two men started through the orchards, commencing with the younger trees, and marked every tree that showed the yellows. A third man with a team followed and pulled the trees out of the ground. As soon as the older trees were reached one man went through, row by row, and chopped down the limbs of the diseased trees, leaving the stumps standing. A fire was started in a convenient place and a man with a horse drew the trees to it and another cut up the brush and put it on the fire. Two days and a half were required in this way each week from about the first of July, when the disease began to show, until peach harvest came on to such an extent that this systematic work was not practicable. Thereafter an ax was carried on the trucks used for hauling the fruit from the orchards and the diseased trees were cut down as found. Three years of this kind of warfare cleared out the whole of the peach orchards on this farm.

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Or buy land for an orchard without our advice. We are land and orchard experts. Don't throw away money. Thousands are making very costly mistakes in blindly selecting land and planting orchards. There is money in orchards if planted and grown right. Get the advice of experts. Send stamps for circular. TYLER BROS., Orchardists, Twin Falls, Idaho.

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GROWERS OF CHOICE NURSERY STOCK
We can supply buds from bearing trees for budding.
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It is worthy of remark that a neighbor on an adjoining farm, although suffering severely, did not lose his orchards and has grown peaches continuously since. On another farm owned by the writer, only two and a half miles distant, not one per cent of the trees were affected in a year. On this farm not ten trees have been affected with the yellows in ten years. Not a case has appeared in five years until the present season, when two trees have developed the disease.

In two of the townships referred to, including that in which these orchards are, yellows commissioners have been regularly maintained and upheld by a general wholesome public sentiment. The orchards were looked after and men were required to remove the diseased trees. In the other two townships the commissioners, if appointed, were easy, and the law requiring the removal and destruction of diseased trees was but imperfectly enforced. Some men, governed by self-interest, cut down and burned their diseased trees, while others neglected to do so and inoculated the surrounding orchards with the yellows.

And the history of the disease seems to show that individual effort in immediately removing the affected trees has been much more successful in holding it in check than any work on the part of the yellows commissioners. For sometimes where these officials have been most active in prosecuting their work, a man has been found who was obstinate and refused to conform to the requirements of the law, so that arrests and fines have occasionally been necessary, and in probably every such case the man has lost all of his peach trees through his neglect and his neighbors have suffered heavy losses. But where a whole neighborhood has been prompt and thorough in removing all diseased trees immediately upon their discovery the losses are reduced to a minimum in two or three years, and the disease may be practically eradicated.

It would appear that the yellows is less virulent in Michigan than in some peach growing sections. J. H. Hale, of Connecticut, said at the meeting of the Michigan Horticultural Society in Battle Creek last winter, that he finds that where young trees are planted in the vacancies where trees have been taken out with the yellows that they soon develop the disease. It has been a general custom in Western Michigan to fill in the vacancies in this way and the writer never has known of an instance where the disease has been communicated to the young trees by this practice. —From "Fruit Belt."

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Enclosed find 25 cents. Please send three recent numbers telling about bee keeping, poultry raising, etc.

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CULTURE OF PEACHES

BY GEO. C. ROEDING, FRESNO, CAL.

THE peach, like the prune and apricot, is indeed a fruit of commercial importance to economic horticulture, and finds wide distribution not only in California, but throughout the length and breadth of the Pacific slope. For size, flavor, color and shipping qualities the peaches grown in this state have a national reputation. The tree prefers a light, deep, sandy loam, preferably inclined to be dry rather than too moist, but well drained. It should be not less than three or four feet deep, the more depth the better.

The general cultural directions for the handling of deciduous fruit trees should be closely followed in the case of the peach tree. Nothing will bring a peach tree to a premature end quicker than not to prune. The trees as they stand in nursery rows have the limbs removed to a point about twelve inches from the ground. Instead of removing all these limbs when topping the tree at eighteen inches, they should be cut back to about two inches long, so in case the buds on the main body do not start in the spring, the buds and the smaller branches will If the buds do start on the main body, the branchlets may be clipped off with a shear. This is a very important point, particularly with peach trees, and if followed by planters generally would in many cases obviate the necessity of growing a new stem, where the buds happen to be blind and fail to start out at the proper height from the ground. From three to five branches should form the head of the tree, and these should be cut back to twelve inches the first winter after planting, and distributed in such a manner on the body of the tree so as to prevent crowding and the development of forks.

The aim of the pruner should be to open up the tree and cut out any central leaders. The second year a severe heading back again should take place, not leaving over two feet of the new growth. Thin out the numerous small laterals, allowing only a few to remain and remove any which are close to the point where the framework branches have been topped. If such laterals are allowed to remain, the new growth in the spring will force its way through them instead of forcing buds out where they belong, making an ugly crook in the tree. The third season from two to three shoots should be allowed to start from the branches of the year before, and they in turn should have their growth shortened in about one-half. The head of the tree will in the third season be fully formed and a medium crop of fruit may be expected. The fourth year the multiplication of new branches should be allowed to develop from those of the year before in about the same ratio, but at the same time following out the shortening in idea. Never neglect to follow up the pruning and thinning of a peach tree every year, no matter how old. Topping without thinning will cause in later years the development of a large amount of barren wood, with a tendency to smother the tree. Trees should not be set closer than twenty-four feet apart, unless in extremely light soil, where twenty feet is permissible. To insure large, firm fruit, thinning should be resorted to if the trees are heavily laden. This should be done when the fruit has set well and before the kernel has hardened.

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IMPORTED FRUIT TREE STOCKS
Mahaleb, Mazzard, Myrobolan and Pear

APPLE SEEDLINGS
American and French Grown. All Grades. Straight or Branched

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Piece and Whole Root

FINE STOCK OF GRAPES, CURRANTS AND GOOSEBERRIES
Strong, Well Rooted Plants

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LARGE GENERAL STOCK
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LARGE STOCK, FIRST-CLASS TREES

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Seeds
THE KIND YOU CAN'T KEEP IN THE GROUND
They grow, and are true to name.
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50,000 Peach 4,000 Comice Pear
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TIM KELLY, Proprietor
WAPATO, WASHINGTON

RELATION OF AGRICULTURE AND STATE IN EUROPE

BY SELDEN F. SMYSER, NORTH YAKIMA, WASHINGTON. CONTINUED FROM JUNE ISSUE

ONE more illustration will be given of this policy of European governments of treating the farmer as a trusted friend of the government, entitled to consideration and capable of rendering real social service to the state, not merely as an industrial worker, but also through his influence on policies and legislation, and through this influence on his fellow men. This is seen in the method of dealing with co-operation which these states have adopted.

Co-operation among farmers (and to some extent among industrial workers of other classes) has come to be recognized by many European statesmen as of fundamental importance. Much is done to encourage co-operation in marketing of grain and other products, co-operation in buying and co-operative banking. To some extent the state aids these movements directly. To a greater extent, however, the policy has been for the state to encourage and aid the non-commercial, voluntary chambers of commerce and agricultural societies. These latter organizations organize and aid the co-operative associations. This indirect method followed by the state is probably more efficient than would be the attempt of the state to promote such associations by its own organizers. Both the members of the societies which engage in the work of organization and the members of the co-operative societies which are created are helped and strengthened by this policy. The co-operative associations thus formed are doubtless more self-reliant and independent, more capable of helping one another without any semi-charitable aid from the state than if they had been organized with more state assistance. That men should help themselves and one another, and desire little from the state and the rich is a part of the co-operative ideal which is strengthened by such policies.

It is admitted that there are many points in the higher organization of agriculture found in Europe for which Amer-

Where Can I Get the Best Trees?

You've asked yourself and neighbors this question scores of times. We dare not tell you—you'd simply smile and say, YES?

But our customers can tell you, and if you want to know who made any of the following statements, we'll gladly tell you. These statements are unprejudiced, perfectly reliable—read them.

"Never saw better trees."

"I want to say, the fifteen hundred (1500) trees purchased of you are the finest in the valley."

"I never saw a finer orchard in my life, and every tree in it has been furnished by the Oregon Nursery Company, Orenco, Oregon."

"Have lost only five (5) trees out of the eight hundred fifty (850) trees planted. That's Orenco trees for you."

"Wish you could see my orchard of over two thousand trees (2000), all from the Oregon Nursery Company. They can't be beat."

"Did not lose a tree out of the five hundred and twenty-five (525) you furnished me."

"We are very proud of our orchard—over five hundred trees (500)—all from the Oregon Nursery Company. They have made the most wonderful growth I've ever seen or heard of."

These people have told you better than we could the kind of trees we grow, sell and deliver. We can furnish you anything you want in the way of FRUIT TREES, SHADE AND ORNAMENTAL TREES, SHRUBBERY, ROSES. Large or small lots makes no odds. Our salesman will be around to see you; should he miss you, drop us a line direct.

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ican parallels could be found. For other points, American parallels are not to be desired. But the complete system which we have described wherein agriculture finds systematic representation in state administration and legislation, whereby the state and the farmers are brought into close co-operation with each other, whereby the agricultural societies share in or perform administrative work of the state, while the state carefully shapes its policies under expert advice for the systematic advancement of agriculture and the agricultural classes—all this constitutes a clearly defined progressive policy which seems to have been comprehended by few American statesmen or legislators. In it is implied a noble ideal of political organization of which our farmers scarcely dream, and of which the writers upon politics say nothing. Surely it is worthy of careful study and investigation.

◈ ◈ ◈

THE SCARCITY OF FARM LABOR.—In recent years the glamour of the city has lured so many young men away from the farms that the question of securing sufficient capable help in the field has become a serious problem. But thousands of industrious farmers who were handicapped by this condition have not only overcome the obstacle but actually turned it to their own advantage. Realizing that something had to be done they abandoned their old style of farming and took to Planet Jr. farm and garden implements. The practical efficiency and the labor saving results from their use were a revelation to thousands of farmers all over the country. The outcome has been that many farmers who depended altogether on help have been able to work their farms alone, do quicker work and realize larger profits. Other farmers have extended their operations over acres that before the use of Planet Jr. implements seemed impossible. Planet Jr. tools are light, strong and lasting and are fully guaranteed. A farmer can actually save two-thirds of his time, prepare the ground far better and get greater results from their use.

Every farmer should have in his possession one of the Planet Jr. illustrated catalogues. It is as essential as an almanac and will be sent on request by S. L. Allen & Company, Box 1106U, Philadelphia, Pennsylvania, makers.

◈ ◈ ◈

SEBASTOPOL TO HOLD APPLE SHOW.—At the meeting of the directors of the Sebastopol, California, Gravenstein Apple Association it was decided to erect a pavilion 90x200 feet in which to give the apple show in July. The building will be frame, with a Mission front and lattice roof. The roof will be covered with green foliage. Edward H. Brown, secretary of the Santa Rosa Chamber of Commerce, was named director general.—San Francisco Call.

◈ ◈ ◈

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You can't afford to take chances when setting out your orchard. You have too much at stake. Insist on getting thoroughly matured, well-rooted stock, so you will lose no time in picking your first crop. By buying poor stock and losing one year's growth (always the case when buying inferior stock) you may miss the year when fruit would be high priced. Can you afford to do so for the slight difference in price it takes to get good, reliable stock?

We are located in the heart of the famous Yakima Valley, where the richness of the soil and the climatic conditions are ideal for the raising of nursery stock. Our stock is clean, well rooted and healthy; our work is so systematized in the office and packing shed that the minimum of mistakes occur, and it is our endeavor to treat all customers with the utmost courtesy.

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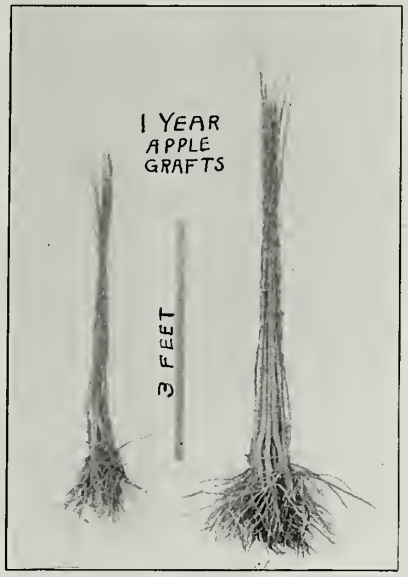

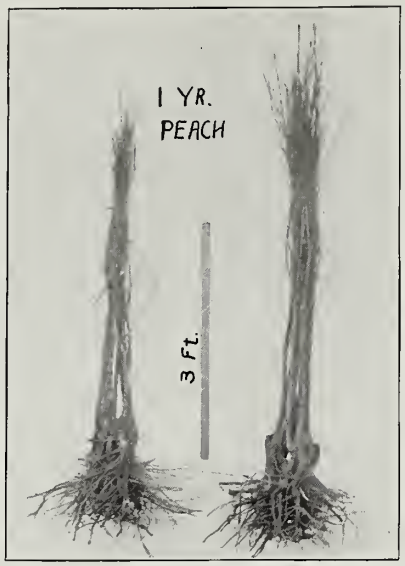

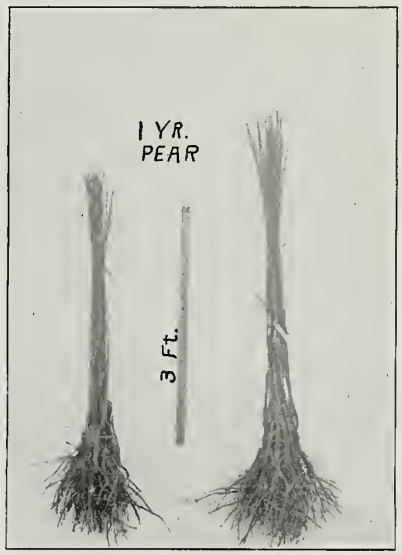

HERE IS THE SORT OF TREES WE SHIPPED

(SEE THE ROOTS)

And here is the kind of testimonials they bring forth:

L. E. Van Horn, Davenport, Washington, October 8, 1909: "The order of apple trees received from you last spring has done excellently. I have from two to three-foot growths, not irrigated."

C. W. Singleterry, Kettle Falls, Washington, October 17, 1909: "J. H. Magee was at my place today. He has planted a good many trees, and after looking over my trees said he never saw the equal. Out of all the trees I planted I lost just one tree."

W. H. Reader, Roosevelt, Washington, March 31, 1910: "They were just what I wanted, and I could not have been better satisfied if I had been there and selected them myself."

Frank E. Brown, Council, Idaho, December 30, 1909: "My order of Delicious received were the best I have ever seen. Keep your eyes on Council Valley."

R. A. Hopkins, of the Cassill Investment Company, Spokane, Washington, November 11, 1909: "Your shipment of over 12,000 trees received in fine condition. In all that great number of trees I found but one of doubtful quality, and I think it will grow. I examined every single tree and must congratulate you on the appearance and quality of your trees."

George L. Jennings, Eugene, Oregon, November 14, 1909: "I wish to congratulate you on your stock. It is certainly the finest I ever saw."

S. W. Heppner, Hood River, Oregon, November 19, 1909: "I went over and saw Mr. Snyder, my Lyle customer. You just ought to have heard him give you a boost. I asked him if everything was all satisfactory. 'Why, Sam W. Heppner, don't you know that the Washington Nursery is the best in the United States? Satisfied! I should say I am, and tell your company that I hold them in the highest respect.' "

A. M. Simpson, Renton, Washington, November 26, 1909: "Those were a fine lot of trees you sent me. Customers are well pleased."

Mrs. C. E. Gaylord, Halfway, Oregon, December 1, 1909: "The 100 cherry trees we got from you were fine, and at least a dozen people have asked where we got them."

Charles Gray, Wyeth, Oregon, November 30, 1909: "I never saw finer trees than your trees, and every one praises them that sees them."

J. M. Pinkerton, Wolf Creek, Oregon, January 13, 1909: "The stock was A No. 1, and I consider it the best that has ever entered this little valley."

Dwight S. Anderson, Wapato, Washington, October 22, 1909: "I visited your place several weeks ago, and Mr. McDonald showed me your stock. After examining the trees of practically every nursery in the valley, I have decided to buy of you."

Andrew Snell, Tacoma, Washington, December 13, 1909: "The trees you shipped here were fine trees with splendid roots."

Curtis Long, Plateau, Washington, May 18, 1910: "I feel that I should thank you for the honesty and kind treatment in our little deal. Those thirty-five trees are all doing fine, and will say that I feel very grateful to you people, as you have done more than I expected you to do."

P. Kriedel & Co., Ellensburg, Washington, May 3, 1910: "The shipment of trees received from you arrived here in splendid condition. The quality and grade were such that we desire to recommend your house to all intending purchasers of trees. Trusting that we shall have occasion to renew our pleasant business relations next season."

Mabton Orchards Company, Mabton, Washington, May 8, 1910: "The last order of trees we bought from you for our tracts are doing nicely. Almost all lived, although it was a little late befare we got water on the land. The company wishes to thank you for your prompt and courteous treatment and the excellent stock of young trees. Any future business we have is yours.
"C. B. Alexander, Secretary."

S. W. Heppner, Hood River, Oregon, November 5, 1909: "You ought to be here and hear the praise you are getting."

There are many more similar letters in our files.

We might fill "Better Fruit" from cover to cover and not say half as much.

A satisfied customer is our best advertisement. We always try to please—first with the best stock that money can buy or skill produce, and last with a square deal on every issue.

Our stock is grown on the Yakima Indian Reservation on the best of soil. It's new, fertile and free from tree diseases. Our trees are clean, hardy, well rooted, and are fully matured before digging.

Our 1910 plant contains nearly seven million grafted and budded trees, besides all our peach, apple, pear, cherry and other seedlings, vines, shrubbery, ornamental stock, etc.

We have at this date (June 20, 1910) orders already booked for nearly two million fruit trees.

We can serve you this year better than ever.

WASHINGTON NURSERY COMPANY

Agents everywhere—More wanted TOPPENISH, WASHINGTON

COMPLAIN ABOUT NORTHWEST 1909-10 APPLE PACK

ONE of the humiliating charges that has been frequently met in the East this year has been the statement: "The apples of the Northwest were undersize, not well graded and the pack was slack; you are falling down in the tone of your output."

This statement was so disagreeable to me that I at once began an inquiry which, after covering five or six of the near-by states, as New York, Connecticut, New Jersey, Massachusetts, Rhode Island and Maryland, I have concluded is very fairly put in the following letter which was received from one of the leading fruit dealers in Connecticut:

"The general complaint on Colorado apples is that the jumble pack bruises the fruit and permits the packing of uneven sizes. Much good fruit has been lost by so doing. The Delicious apple a year ago was considered "delicious" in every sense of the word, and would have been a good seller this year had they kept up the reputation. We find the Rome Beauty, Jonathan, Spitzenberg and Winesap were all very satisfactory as far as the apples were concerned, but many were packed very slack, some boxes of 96 size should really be 112. In regard to the Yellow Newtown Pippin, would say that Eastern people call anything in the green apple to be a cooking apple, and if you took as good care of the Newtown Pippin and shipped only large sizes, they would be substantial as cooking apples, which is the only thing that suits them. As a pie or sauce apple they are a failure."

Other dealers have made substantially the same criticisms, and out of a score of instances only one complaint specifically cited Oregon and Washington, though Mr. F. Wagner, of Chicago, at the hearing before the House Committee on Agriculture, in the case of the *late* Lafean bill, intimated that the whole Northwest pack was in the same class the past year and that the entire section would lose heavily as a result. The conditions implied by Mr. Wagner appear to have been actually evidenced only by the Colorado and some other intermountain shipments.

It is unfortunate for Oregon and Washington at present that so many dealers are in the habit of speaking of the fruit of that whole region as of the Northwest. Some short term is needed for the two Northwest states, for their product stands in a class by itself and one of two things must be done if Oregon and Washington are to get the full credit for their fruit and pack. Either a campaign for a better pack in the interior, or one on behalf of a distinct separation of the Oregon and Washington, and possibly Idaho fruit, from the fruit of Colorado in the trade.

It occurs to one from the Eastern point of view that it would be much more for the good of the whole Northwest if Colorado growers and packers could be "shown" that it is to their interest to establish a sound system of uniform grading, abandon the jumble pack, adopt the Oregon box and get into the game with the "top-notchers" from Oregon, Washington and Idaho.

In any event, do something to place the discredit where it properly belongs, or, better, remove all possibility of its recurrence. Certainly some of the Delicious apples offered for sale in New England this spring in boxes bearing Colorado stamps, and it is fair to presume there was no false branding, were anything but creditable to any of the leading Northwest sections. This year let the motto be "a more uniform and closer pack."

As to the opinion of the dealer concerning the Yellow Newtown it may be said that no criticism of the fruit or its merits is intended; it is merely an expression of opinion in answer to a query by the writer as to why more Yellow Newtowns were not to be found in the New England markets. It affirms again what has been so frequently expressed at our horticultural meetings, the Eastern United States wants color in her choice apples. It is something of an anomaly, since this is the home of the great majority of the high-class amateurs who so persistently insist that such apples as the Yellow Newtown, Ortley, Grimes Golden and other light yellow or green apples rank highest in quality, while the red apples, with a few notable exceptions, as Jonathan, Esopus, Delicious and Stayman, are seconds at best.

Yours for a better pack in 1910,

E. R. L.

◈ ◈ ◈

YOUNG apple trees can be easily protected from rabbits and mice by strips of wire netting. These may be rolled around a broom handle to make them cylindrical and thus keep their shape when sprung on the trunks. Netting twenty-four inches wide is large enough. If the netting is galvanized and if the strips are made large enough to allow for four or five years' growth, no further attention need be given the trees after once enclosed. The cost is only a few cents, but this is insurance, as the time lost in replacing a tree is to be considered.—Orange Judd Farmer.

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The Pacific Monthly Company,
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ABOUT FALL PLANTING

THERE is an erroneous impression in some localities, that tree and shrub planting can be successfully done in the spring only. This is by far not the case, and below, we cite you conclusive evidence that fall planting in many instances is even preferable to spring planting.

There is ample time to get everything in readiness, the trees are in dormant condition, and as soon as a tree or shrub becomes dormant it can be moved from one place to another and the change of location will affect it little. Trees planted in the fall are full of nutriment which is maturing into woody matter throughout the winter. All this natural function of the tree is more rudely disturbed by spring planting—and the tree then lives on itself, as it were, for some weeks before it is able to make new roots for its food supply. But when set out in the fall the roots immediately begin new growth and recover from the moving, so that in the spring the trees are ready to go into business for themselves in the most vigorous and successful way.

As a rule, the ground is in better condition for planting in the fall than in the spring. Nine-tenths of spring planting is done when the ground is too wet for best results. The following is quoted from John A. Warder, an authority on pomology:

"Far the milder latitudes with its splendid fall weather, camparative leisure, and the soil nearly always in good condition, everything invites us to plant in autumn, the planting season often continuing until mid-winter."

Fall gives a longer season for planting. The orchardist has more time to devote to planting and the nurseryman has more time to give to the planter. Perhaps your spring is two or three weeks early, in this case your trees should be planted earlier than date you have ordered the trees shipped. If your trees have been planted in the fall, the delays which come up every spring in getting your trees in the ground at proper time are done away with.

"All physialagists agree that the best season far planting trees is in autumn, directly after the fall of the leaves. The trees are then in a perfectly dormant state. Transplanted at this early seasan whatever wounds have been made in the raats commence healing at ance, as a depasit directly takes place af granulous matter from the wound, and when the spring arrives, the tree is already samewhat estavlished and ready ta cammence its grawth. Early autumn planting is far this reasan greatly preferred in all mild climates and dry sails, and even for very hardy trees, as the apple, in calder latitudes. As the fixed pasition in the graund, which trees planted then get by the autumnal and early spring rains, gives them an trees and so continue, covering all deep with soil, *advantage of an extra season's grawth over newly maved trees.*

The above is from Charles Downing's great work, "Fruits and Fruit Trees of America," and though written many years ago this book still stands as a guide to fruit growers all over the world, and his advice as to fall planting and on everything else pertaining to the orchard is a rule by which the greatest orchards in this country have been grown. In recommending fall planting for milder latitudes we are voicing not only our own opinion, based upon an experience covering many, many years spent in nursery and orchard, but the opinion of the best orchardists and horticulturists our country has produced.

Many planters buy their trees in the fall and heel them in, so they will have them ready the next spring just exactly when they are wanted. In this case be sure they are handled properly.

Cut open all bundles and with a sharp knife cut off all bruised and mangled roots to good sound wood. Select a dry knoll, or a place where no water can stand, dig a trench two feet deep, throwing the earth out so as to form a bank, on which lay the trees with the roots in the trench; then throw a layer of earth on the roots, and on the whole length of the tree as they lay on the bank, until they are buried to the very tips. Tread tightly and firmly, then lay in the next row of rounded up to the center. Do not be afraid of putting too much earth on roots or bodies of trees. All trees must be spread out in thin layers. See that furrows are dug to carry off all surface water.—Stark Brothers' Nurseries & Orchards Co., Louisiana, Missouri.

THROUGH THE SOUTH SEAS WITH JACK LONDON

Jack London saw many strange sights in his year's cruise on the "Snark." Not all of us will have the opportunity of making such a voyage, but we can enjoy the enchantment and novelty of such a trip through the descriptions of such an artist as London. The series of travel sketches is running now. Send the coupon and get started right.

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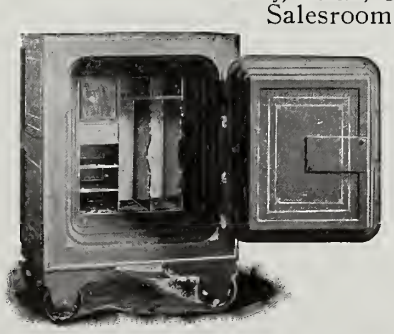

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BETTER FRUIT—PART IT TAKES IN OUR DAILY LIFE

OUT in Oregon, a man, who is a famous fruit grower himself, has begun to publish a paper for fruit farmers. He is the manager of a fruit raising association, and an officer in half a dozen pomological and horticultural societies. He knows the orchard business from end to end, having been in it from boyhood. Because he knows it, he claims that his paper is "The best fruit growers' paper published in the wide world," and he has chosen its title out of his experience. That title is simply the two words, "Better Fruit."

It is short and simple—but could it be improved? The whole need of taking the paper is in it, and the whole reason for reading it, and the whole use of having orchards at all. Larger orchards would not have reached the heart of the matter, nor handsome farms, nor finer display in packing. Back of all that comes the one insistent thing—better fruit; and for that reason the reader of the paper is likely to trust the man who has chosen so essential and inspiring a title.

Perhaps that publisher is a religious man. Perhaps he isn't. But if he is, it is safe to say that he is a valuable Christian, because he looks to essentials. Some Christians never seem to get to the fundamentals of religion at all. They apparently never think out the question of bearing fruit for Christ. It is left out of their Christian lives. They have an idea of individual salvation, and consider that when that is settled their religious life is all that it needs to be. But is it? Is an orchard really an orchard if it never bears any fruit whatever? The veteran fruit grower in Oregon could never make a mistake like that.

Better fruit—not even just fruit, but better fruit—is the rule of fruit bearing that is worth the name. When a Christian starts with this idea, he or she is starting toward success in spiritual living. It is a perfectly patent fact—one that stares the thinker in the face the moment he really considers the situation—that if every Christian in the United States brought just one person into the kingdom of Christ every year there would be no outsiders left in a few years. Yet thousands of Christians pray, "Thy kingdom come," every day, as regularly as sunrise, and apparently never think about it again; and the land is full of neglected people, old and young, for whose soul no man cares. All this evasion of the essentials of religion reacts upon the evader, consciously or unconsciously. "When I joined the church," said one girl recently, "I was so happy. I was happier than I had known I could be. But it went off. I guess it was just excitement. I don't think there's so much in religion, anyway, as some people keep saying there is." But the truth was, that she had never tried to do anything whatever for Christ. She expected happiness without service. She never thought of making her religion bear fruit in her life and in the lives of others. "Better fruit" is a motto of endeavor, of happiness, of Christian power and peace. "No fruit at all," was her motto, and there was consequently not much in her religion, just as she acknowledged.

No orchard bears fruit without trouble and hard work. Any fruit grower will tell the inquirer how many obstacles come along, one after the other, day after day. There are freezes and thaws, worms at the roots, scale on the bark, mildew on the leaves, insects attacking the fruit; as fast as one danger is over a new one appears, and there is no period free from care and effort. Good fruit may be almost said to be against nature—nature, which sends these myriad enemies to injure the crop. The law of better fruit is ceaseless struggle. So in Christianity. To expect natural impulses and natural disposition to bring forth fruit for Christ is useless. Most of the time the young Christian has to fight natural impulses, and do better instead. Every day temptations come, and must be met. When one is conquered, another crops up. Not unless the idea of fruit, and more fruit, and better fruit, is kept before the soul can these obstacles be downed. Every life that yields the fruits of righteousness has met and conquered them, and glorified God in the struggle and victory.

For fruit is a thing there is no gainsaying. "I can stand hearing Deacon Jones pray in meeting," said his irreligious neighbor. "Prayers are easy for some folks to make, and Jones doesn't pray very well, anyhow. But what I can't stand is living next door to Jones. He's so good, clear through, that he makes me want to be a Christian, too. If I stay alongside of him I'll be joining the church inside a year." And he did. The fruits of the gospel are its unanswerable arguments. A life that carries out the Beatitudes and the Commandments convinces everybody of the reality of Christianity.

"By their fruits ye shall know them." It is the fair test, and the only test. "I had a Sunday school class for two years," said a young man the other day. "But what good was it? I saw that, and so I gave it up." His remarks were directed the wrong way. What he ought to have said, after two years of lazy teaching (during which he was absent from class half the time, by the way) with no results, was, "What good am I?" The Christian who bears no fruit need not complain of religion; the trouble is closer at hand, in his own

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Your business could be increased and you would more quickly recognize the opportunities offered you, if you had a thorough knowledge of and were familiar with

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It may add $1,000.00 to your net profit this year. Don't "if" or "but"—don't argue, but investigate. Ask for proof and references of nearby shippers—ask Mr. Shepard, the publisher; he knows. That's all.

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character and will. No true disciple ever yet had a fruitless Christian life. To bring forth abundantly is the rule of the spiritual harvest. A noble, faithful, loving life brings forth better fruit each year, and goes on to its abundant and immortal reward. "They that turn many to righteousness" shall shine "as the stars for ever and ever."—Forward, a weekly illustrated paper for young people, published in Philadelphia.

◈ ◈ ◈

GRASSELLI ARSENATE OF LEAD PASTE. Three reasons why Grasselli arsenate of lead is superior to paris green as a remedy for the potato bug. First—*It sticks to the foliage.* On account of its adhesive properties, it will not be washed off by ordinary rains. Second—*It is safer.* Grasselli arsenate of lead will not burn or injure potato foliage, even if used stronger than the regular formula. Third—*It saves labor.* One application of Grasselli arsenate of lead will take the place of several applications of paris green, thus saving cost of labor. Mix thoroughly the required amount of the paste in a small quantity of water. Use five pounds of paste to each fifty gallons of water. The important point to remember when using arsenate of lead on potatoes, is that it should be applied early in the season. The first spray should be applied when the vines are two or three inches high. The idea is to have the poison there when the first bug puts in its appearance and control them before they can gain any headway.

On account of its adhesive qualities, Grasselli arsenate of lead will be there and do its work even though the bugs are not hatched out for a considerable length of time after the application of the poison.

◈ ◈ ◈

SUMMARY OF O. A. C. EXPERIMENTS ON Peach Blight.—Peach fruit spot causes a loss to the peach and apricot growers of Oregon probably greater than that caused by all other peach diseases. The two seasons' work has demonstrated conclusively that the disease can be practically eliminated from an orchard by spraying. Good results can be obtained by spraying, either with bordeaux mixture or with lime-sulphur solution. The results so far are slightly in favor of the bordeaux. Some danger to foliage accompanies summer spraying with either bordeaux or lime-sulphur, therefore care should be exercised in preparing the spray and in not using it too strong. The fall application seems to be more efficient than any other single one. It should be made as soon as possible after the late fruit is gathered. If San Jose scale is present, lime-sulphur (1 to 10 or 12) should be used; if not, bordeaux may be used if preferred. This fall application is beneficial also in controlling the peach twig blight. It is possible that one annual fall spraying may be all that is necessary to control the twig blight and the fruit spot. Spraying just as the buds are swelling in the spring is useless as a preventive of peach fruit spot. This is, however, the most important application for the control of peach leaf curl and should not be omitted if this disease has been prevalent. Peach fruit spot attacks the fruit between May 10 and June 15. The first spring spraying, therefore, should be done about May 10; the second about June 1. If the disease has been

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Assistant General Passenger Agent, Portland, Oregon

or

A. M. CLELAND
General Passenger Agent, St. Paul, Minnesota

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Read what Hood River says

Hood River, Oregon, November 27, 1909.
This is to certify that I have used Cooper's Tree Spray Fluids, V1, for killing San Jose scale and found it very effectual.
G. R. Castner, County Fruit Inspector.

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unusually prevalent, or if rainy weather favorable to the growth of the fungus occurs, the second application may be made about May 20 to 25, and a third one about June 5 to 10.

◈ ◈ ◈

SALT is an essential to animal life. Animals will migrate hundreds of miles to satisfy their cravings for it, and traders make of it a medium of exchange with savages who do not know the meaning of "money." Though absolutely in her demands, Nature in her wisdom, has made the required quantity so small that no human being may want, not only for the required quantity but also the highest quality. Its very cheapness has tended to carelessness of the purity of this prime essential of life. Salt, ground, for table or dairy purposes, as is universal on the Pacific Coast, we do not believe is within the limits of the pure food law, we are convinced that it should not be. Chemically pure salt is obtained by recrystalization—and this method C. E. Whitney & Company, of San Francisco, alone on the Pacific Coast, heretofore have used partially, and henceforth will use exclusively.

◈ ◈ ◈

INSTRUCTIONS for picking and packing berries issued by the Ashland, Oregon, Fruit and Produce Association: Strawberries are graded "A" and "B." "A" grade berries must be nice in appearance, firm and clean; smallest berry for "A" grade should be of such size that four berries will form one row along side of cup; face the "A" grade with medium size berries; do not put the extra large berries on top. "B" grade, firm and clean, no culls, and need not be faced. Stems on all strawberries should be about half an inch long. Pick in mornings only, and keep dry and cool; do not let crates or picking crates set in sun. Deliver to warehouse before 10:30 a. m. Use wagon with springs, and cover fruit. Make rule for pickers that berries must not be carried in hand, but must be transferred to cup at once after picking. Berries should be handled as little as possible. Fill cups about half an inch above rim; fill corners; pack firmly, but do not press. In picking blackberries, raspberries and logans remove all stems and pick as soon as berries come off readily. Be careful to put no overripe or crushed fruit in cups, as it will cause entire cup to mold. Use no small or dried berries. Especial care is required to fill corners; if not done, shipping causes berries to sink in cup. Currants and gooseberries are shipped in crates and cups, same as strawberries. Get instructions from manager as to time and conditions of picking. Mark grower's name in upper left hand corner of crate. Attention to details gives satisfaction to customers and keeps up the price.

◈ ◈ ◈

MR. J. W. HAMILTON, of St. Paul, writes that he had picked on his ranch at White Salmon, on May 27, a 24-box crate of Clark's Seedling strawberries. They reached St. Paul June 1, were delivered at noon, and left out in the sun on the back porch until after six o'clock. They were picked over the same night, only one boxful out of the twenty-four having gone to pieces. On June 8 they were still using some of these berries, or thirteen days from the time they were picked. Some of the berries would easily have lasted four or five days longer if they were self-denying enough to encourage them that way.

"I HAVE SO LITTLE FUNGUS

That I cannot afford to mark my fruit with bordeaux," says Mr. George T. Powell, of Ghent, New York, a grower of fancy apples. "I have less scale and finer foliage than ever before."
Reason: Five years' consecutive use of

"SCALECIDE"

Cheaper, more effective, and easier to apply than lime-sulphur
Send for booklet, "Orchard Insurance"

PRICES: In barrels and half-barrels, 50c per gallon; 10-gallon cans, $6.00; 5-gallon cans, $3.25; 1-gallon cans, $1.00

If you want cheap oils, our "CARBOLEINE" at 30c per gallon is the equal of anything else
B. G. PRATT CO., *Manufacturing Chemists,* 50 Church Street, NEW YORK CITY

Medford Spray Co.
MEDFORD

Oregon Spray Co.
PORTLAND

Hood River Spray Mfg. Co.
HOOD RIVER

These Factories Make and Distribute the Famous

NIAGARA
Lime-Sulphur Spray

The leading fruit growers and fruit growers' associations of the Northwest use NIAGARA exclusively

There is a Reason Why

NIAGARA is made under special process originated by ourselves. The only known process by which is made a permanent, clear and reliable solution of lime and sulphur of sufficient strength to meet all requirements

Write for Further Information

Wherever Fruit Excels* NIAGARA SPRAY *is Used

BETTS FLUME CEMENT

STOPS WASTE OF WATER

PREVENTS EXPANSION AND CONTRACTION

PRESERVES THE WOOD

Manufactured by

The

C. G. Betts Company

Spokane, Washington

AMERICAN APPLE GROWERS' CONGRESS PROGRAM

St. Louis, Missouri, August 10-11, 1910.

The Apple Interest—In the Mississippi Valley, Governor Herbert S. Hadley, Jefferson City, Missouri; in the Exertme West, James M. Irvine, editor The Fruit Grower, St. Joseph, Missouri; in the Alleghanies, Honorable George H. Powell, New York; in canada, Honorable Alec McNeil, Ottowa, Canada.

Pre-Cooling—Honorable L. A. Roy, Rector Building, Chicago.

Grades and Packages—Honorable W. L. Wagner, Chicago; Honorable L. A. Goodman, president American Pomological Society, Kansas City.

Cross Fertilization as Affecting the Yield—Dr. J. C. Whitten, professor of Horticulture, Missouri State University, Columbia, Missouri; Dr. S. A. Beach, professor of Horticulture, Iowa Agriculture College, Ames, Iowa.

Best Means for Securing Reliable Statistics for the Apple Grower—Professor Wm. A. Taylor.

San Jose Scale—Professor S. A. Forbes, entomologist in the University of Illinois, Urbana, Illinois; Professor C. E. Bassett, secretary American Federation of Horticultural Societies, Fennville, Michigan.

Intensive vs. Extensive Orcharding—Professor Wendell Paddock, Columbus, Ohio, Department of Horticulture; Honorable J. Linn Torrey, orchardist, Fruitville, Missouri; Professor W. N. Hutt, Raleigh, North Carolina, horticulturist.

Organization and Co-operation—Honorable P. A. Rogers, orchardist and manager Ozark Fruit Growers Association, Gravitte, Arkansas; Honorable J. F. Moore, Grand Junction, Colorado; E. H. Shepard, editor of "Better Fruit," Hood River, Oregon; J. B. Graves, manager Fruit Shippers Association, Neosho, Missouri.

Spraying, Lime and Sulphur—Professor J. P. Stewart, horticulturist at State Agricultural College, State College, Pennsylvania; Professor W. M. Scott, expert pomologist, United States Department of Agriculture, Washington, District of Columbia.

Spraying, Best Spray for Scab and Codling Moth—Professor W. J. Green, horticulturist, Ohio Experiment Station, Wooster, Ohio; Professor John Craig, secretary American Pomological Society, Ithaca, New York; Honorable H. M. Dunlap, orchardist and ex-president American Apple Growers Congress, Savoy, Illinois.

The Weather Bureau, as an Aid in Preventing Loss of Fruit by Frost—Orchard Heating—Dr. J. C. Blair, professor of Horticulture, Illinois State University, Urbana, Illinois; Dr. W. L. Howard, professor of Horticulture, Missouri State University, Columbia, Missouri; C. C. Wunt, orchardist, Burlington, Iowa; A. L. Hamilton, orchardist, Grand Junction, Colorado.

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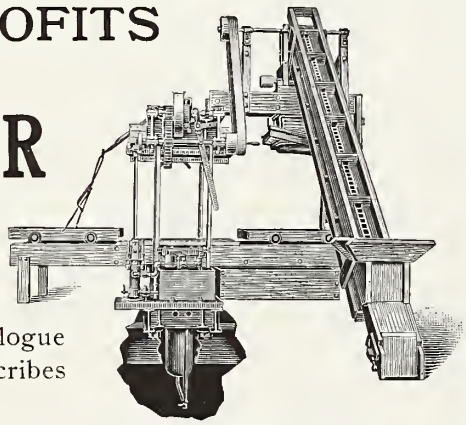
HOW TO PREVENT PEACHES FROM ROTting.—At last we have a remedy for preventing the peach rot which so often sweeps away the crop just as it is ripening. This is a solution known as self-boiled lime-sulphur. Heretofore nothing could be done to prevent the spread of the rot because the usual spraying matcrials caused too much injury to the leaves of the trees. An insect, known as curculio, helps to soread the rot by gouging holes in the peaches. Sometimes this bug punches holes in the fruit for the purpose of depositing its eggs, but more often it seems to do so out of pure deviltry. The rot generally starts from these wounds. Paris green would poison the curculio, but it injures the foliage of the tree. Likewise bordeaux mixture would control the rot, but it is even more disastrous to the leaves than paris green. As a substitute for paris green a poison known as lead

BIG PROFITS

IN

CIDER



Write for Catalogue which fully describes and illustrates

THE ORIGINAL MOUNT GILEAD

HYDRAULIC

Cider and Wine Presses

Capacity, 10 to 400 barrels per day
Made in all sizes, hand or power

FULLY GUARANTEED

Write for any information desired. We can show you how $1,500.00 clean profit can be made.

The Hydraulic Press Mfg. Co.

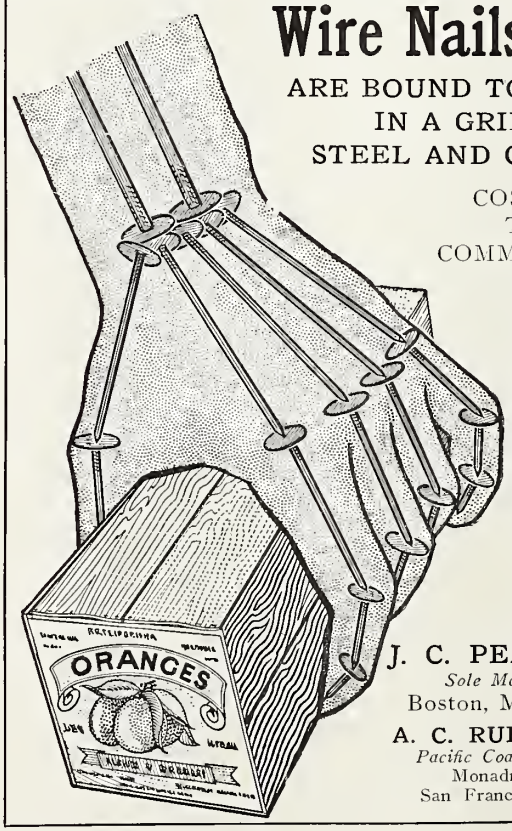
Largest Manufacturers of Cider Presses in the World
60 Lincoln Avenue MOUNT GILEAD, OHIO

Western Sales Agents:
The Western Supply Company, Portland, Oregon

FRUIT BOXES NAILED WITH

Pearson's Cement Coated Wire Nails

ARE BOUND TOGETHER IN A GRIP OF STEEL AND CEMENT



COST LESS THAN COMMON NAILS

Order Pearson Nails now and always. Shipments arrive in good order. No broken boxes. No pilfering. Easier to drive. Harder to pull. Hold better. Don't split boxes.

FOR SALE BY ALL DEALERS

J. C. PEARSON CO.
Sole Manufacturers
Boston, Massachusetts

A. C. RULOFSON CO.
Pacific Coast Sales Agents
Monadnock Bldg.,
San Francisco, California

Bruners Patent Picking Bucket

Does not bruise fruit. Two buckets fill an apple box. Saves its cost in one day's picking. Place your orders now.
$1.50 each, $8.00 for 6

GENERAL DISTRIBUTORS

FRANZ HARDWARE CO.

HOOD RIVER, OREGON

HAVE YOUR WELLS DRILLED

THE OLD FASHIONED OPEN WELL is a breeding place for typhoid and other disease germs, whereas the drilled well gives a never-failing supply of pure, sparkling water. Write today for prices.

The Pacific Coast Well Drilling Co.

1901 Berkeley Street Portland, Oregon

The Troutman Orchard Heaters

ARE THE WORLD'S "STANDARD" OF EFFICIENCY AND ECONOMY

We manufacture heaters of all sizes and for all conditions.

We want 400 agents—good, reliable and responsible. References of proof of ability required.

Send for our Yearbook for 1910-1911.

Now is the time to prepare to fight Jack Frost next spring.

ALL INFORMATION SENT FREE

THE ROUND CREST ORCHARD HEATER CO.

Canon City, Colorado

arsenate is used, and it has lately been found by the United States Department of Agriculture that it can be combined with the newly discovered self-boiled lime-sulphur solution and both sprayed on the trees at the same time, thus controlling both the insect and the disease. Self-boiled lime-sulphur is prepared as follows for 100 gallons: Place sixteen pounds of fresh lime in a barrel and almost cover with water. Weigh out sixteen pounds of sulphur and run through a sieve to break up the lumps. As the lime begins to slake add the sulphur, stirring it in. Continue stirring and add more water as needed, to form a thick paste at first and then gradually a thin paste. The lime will supply enough heat to boil the mixture several minutes. As soon as the lime is well slaked, enough cold water must be added to cool down the whole mixture or it will be ruined. Use enough water to bring the entire quantity of the mass up to 100 gallons. Use four pounds of arsenate of lead to 100 gallons of water, if used alone, or to 100 gallons of the lime-sulphur, if both are to be used at the same time. Spray as follows: First, with the lead arsenate alone (four pounds to 100 of water), when the shucks are shedding. The second spraying should come from two or three weeks later, or about one month after the petals drop, using the lime-sulphur and poison combined. The last application should be about one month before the fruit ripens, using the self-boiled lime-sulphur alone. The cost of materials, labor and everything for three sprayings as advised above, will amount to less than five cents per tree. A pamphlet treating the above subject in full is being published and will be sent free upon application to W. L. Howard, secretary State Board of Horticulture, Columbia, Missouri.

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WHAT YOU EAT IN APPLES.—Do you know what you are eating when you eat an apple? No, not the sorts and varieties of worms, for there will be no worms if you have bought your fruit from an orchardist who sprays his trees, but the food qualities, the tissue builders, the brain makers? You are eating mallic acid, the property that makes buttermilk so healthful. You are eating gallic acid, one of the most necessary elements in human economy. You are eating sugar in its most assimilable form, combined carbon, hydrogen and oxygen caught and imprisoned from the sunshine. You are eating albumen in its most available state. You are eating a gum allied to the "fragrant medicinal gums of Araby." And you are eating phosphorus in the only form in which it is available as the source of all brain and nerve energy. In addition to all these you are drinking the purest water and eating the most healthful and desirable fibre for the required "roughness" in food elements. The acids of the apple diminish the acidity of the stomach and prevent and cure dyspepsia. They drive out the noxious matters that cause skin eruptions and thus are nature's most glorious complexion makers. They neutralize in the blood the deleterious elements that poison the brain and make it sluggish. The contained phosphorus is not only greater than in any other form of food, but it is presented in a shape for immediate use by the brain and nerves, where it may flash into great thoughts and great deeds. The ancients assigned the apple as the food for the gods, and its juices the ambrosial nectar to which they resorted to renew their youth. Men are the gods today, and the apple is their royal food, the magic renewer of youth. Eat a rich, ripe apple every day and you have disarmed all diseases of half their terror—National Horticulturist.

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DENVER SHOW TO CHANGE NAME.—It is announced that the trustees of the Denver show are considering calling their apple exposition something like the Intermountain Apple Show, the Middle West Apple Show, or some other name. The Denver show this year will be held the first week in December.—Spokane Chronicle.

Stranahan & Clark

DEALERS IN

Commercial Fertilizers
Land Plaster, Lime
Plaster Paris, Cement
Building Plasters

HOOD RIVER, OREGON

LILLY'S BEST BEE SUPPLIES

Are standard—the best to be had for money-making purposes. We are **Agents for Lewis Bee Ware. Send for Catalog.** Most authoritative Bee Book issued, 84 pages of definite information. Illustrated.

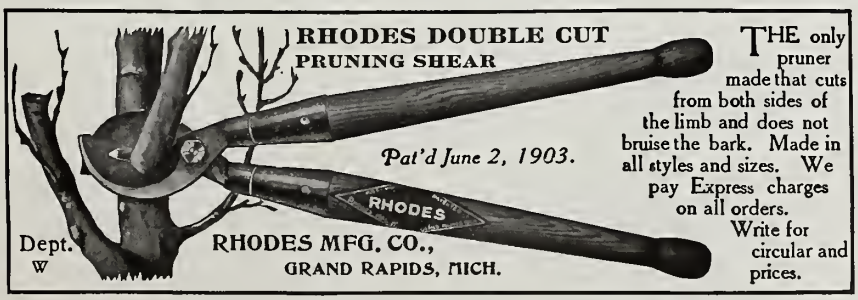
The Chas. H. Lilly Co. Seattle.

Land Plaster, the Great Soil Stimulator

Strengthens and invigorates all soils. You cannot afford to be without it

OREGON LIME & PLASTER COMPANY

Mill: Lime, Baker County, Oregon. Office: Worcester Bldg., Portland, Oregon



THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

C. M. SHAW ROY F. DEAN

Dean & Shaw

Electrical Supplies and Fixtures
Scientific Electrical Construction

Home Phone 3 Hood River, Oregon

WILL SEND DISPLAYS AT APPLE SHOW TO CHICAGO

OFFICIAL announcement is made by E. F. Cartier Van Dissel, chairman of the board of trustees of the National Apple Show, Inc., that the prize-winning fruit of the third annual exposition at Spokane, Washington, next November, and district and general displays from Washington, Oregon, Idaho and Montana will be sent to Chicago for exploitation purposes in First Regiment Armory during the week of the International Livestock Exhibition. The Chicago plan involves an expenditure of $35,000, exclusive of the cost of the Spokane show, which is estimated at $42,000. Officials of transcontinental railroads interested in the development of the Northwestern states have guaranteed a large proportion of the fund for the first named exhibition and the various fruit districts in the four states are depended upon for $10,000 by taking space to display their products at Chicago. No charge will be made for entries or exhibition space at the Spokane show, which is open to the world. The general exhibits will be transported from Spokane to Chicago free of expense to the growers, and, in addition, the management of the National Apple Show will move at least six prize-winning carloads, also the winners in the ten-box, five-box, single box and special display contests, thus making an exhibition of apples that will attract wide attention to the fruit districts in the Northwest, as well as exploit their products. Each district will have one or more representatives in charge to distribute literature and give out information. Space for district exhibits at Chicago has been engaged by the Commercial Club and Apple Growers Union, Hood River, Oregon; Commercial Club, Wenatchee, Washington; North Central Washington Development League, Commercial Club and Fruit Growers Union, Walla Walla; Chamber of Commerce, Ellensburg, Washington; Latah County Fruit Growers Union, Idaho; Chamber of Commerce, Missoula, Montana; Commercial Clubs of Stevens County, Washington; Commercial Club, Medford, Oregon; Commercial Club and Fruit Growers Union, North Yakima, Washington; Commercial Club, Lewiston, Idaho; Sunnyside, Zillah and Spokane Valley Fruit Growers Associations and the Sutherlin Development League, Oregon. The trustees of the show have decided to eliminate orchard land companies from making the Chicago show a vehicle for private advertising. This has met with general approval, and the land companies are assisting the various commercial organizations and fruit growers associations by contributing to the expense funds, as they realize that the movement will encourage emigration and investments, and thus is bound to be of great benefit to every line of trade. Representative committees have been appointed in several districts to secure pledges of the fruit required to make the exhibits, also to handle financial matters and see that the fruit is properly assembled and placed on exhibition in the best possible condition in Spokane and Chicago. Commercial clubs have been active in co-operating with the fruit growers associations. Generally, the rental charge for the district displays at Chicago has been taken up by the chambers of commerce, the growers pledging sufficient fruit for the exhibits. Ren H. Rice, secretary and manager of the show, is arranging for a tour of Montana and Southern Idaho to interest fruit growers there in the Chicago show. He has already visited many of the principal apple districts in Washington, Oregon and Idaho, where, he says the prospects were never better for enormous yields of fruit. Thousands of acres of new orchards will come into bearing this season, and, judging from the bloom-laden branches the young trees will give satisfactory results. When the plan of moving the prize-winning exhibits to Chicago was first suggested, there was some doubt as to its feasibility, but the keen interest, the hearty co-operation and financial support accorded by the various districts quickly determined the matter. Sufficient pledges have been received to justify the trustees announcing that the Chicago Exposition will be undertaken following the Spokane show, and we have every reason to believe that practically every Northwest district will be represented.

VEHICLES
AND AGRICULTURAL
IMPLEMENTS

THE BEST OF
ORCHARD AND GARDEN TOOLS
A SPECIALTY

GILBERT - VAUGHAN
IMPLEMENT CO.
HOOD RIVER, OREGON

RESOURCES AND OPPORTUNITIES

There is more doing in the West today in the way of progress and development than in any other section of the United States. If you are interested and want further information about opportunities and resources of a vast new empire, use the coupon.

The Pacific Monthly Company,
Portland, Oregon.

Find enclosed 25 cents, for which please send me three recent numbers containing articles about resources and opportunities in the West.

Name.....

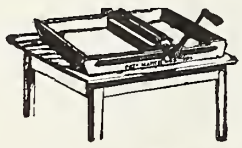
BF Address.....

COLUMBIA RAMS

Make Arid Land Valuable

Cost about $15.00 per acre of land irrigated

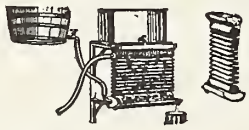
COLUMBIA RAM CO.
Tenth and Johnson Streets Portland, Oregon



The importance of thoroughly cooling and aerating fresh milk and cream is so well known among up-to-date dairymen that it hardly seems worth while to mention the matter here. If you have any doubts about same, write for information and descriptive matter of our coolers. Prices vary from $2.25 up, depending on size and quality.

Please remember that we make a specialty of machinery and supplies for the dairy, creamery and cheese factory. If not convenient to call on us, write a postal card today for circular matter and catalogues of anything in our line in which you are interested.

MONROE & CRISELL
145 FRONT STREET PORTLAND, OREGON



STORAGE

Ship your Furniture to us
to be stored
until you are located

Transfer & Livery Co.
Hood River, Oregon

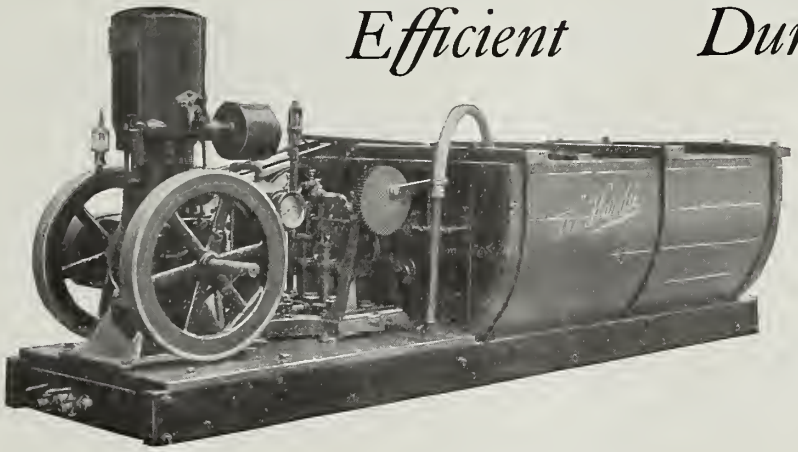
HEADQUARTERS FOR
CENTURY
SPRAY PUMPS

Hose, Nozzles, First-class Plumbing Supplies

C. F. SUMNER
Successor to Norton & Smith
HOOD RIVER, OREGON

The Hardie Triplex Sprayer

Efficient *Durable* *Simple*

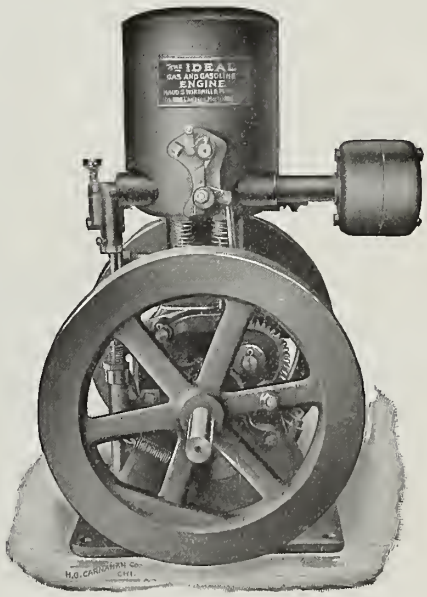


NOTHING TO WATCH BUT THE SPRAY

OUR 1910 model Triplex will suit you; will suit you in efficiency, in simplicity, in pressure, in capacity and in general makeup. Our TRIPLEX PUMP gives you an even continuous pressure, be it high or low, as desired. Our Rotary Agitator gives thorough agitation and our Ideal Engine sufficient power.

On all Hardie Power Sprayers we use Our

IDEAL ENGINE



WE use this engine as it is compactly built, has no extra water or gasoline tank and is built for hard continuous service. The cooling system is the most practical of any.

No Tank No Fan No Freezing

Our complete catalogue giving prices of twenty different styles of hand and power sprayers, engines, nozzles, etc., is yours for the asking

The Hardie Mfg. Co.

Hudson, Michigan 22 Front Street, Portland, Oregon

OREGON RAILROAD & NAVIGATION CO
UNION PACIFIC
THE OVERLAND ROUTE

Excursion Rates to the East

DURING 1910
FROM ALL POINTS ON

The Oregon Railroad & Navigation Company

To Chicago	$72.50
To Council Bluffs	60.00
To Omaha	60.00
To Kansas City	60.00
To St. Joseph	60.00
To St. Paul	60.00
To St. Paul via Council Bluffs	63.90
To Minneapolis direct	60.00
To Minneapolis via Council Bluffs	63.90
To Duluth direct	66.90
To Duluth via Council Bluffs	67.50
To St. Louis	67.50

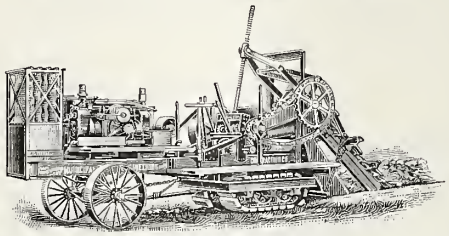
Tickets will be on sale May 2 and 9, June 2, 17 and 24, July 5 and 22, August 3, September 8.

Ten days provided for the going trip. Stopovers within limits in either direction. Final return limit three months from date of sale, but not later than October 31. One way through California, $15.00 additional.

Inquire of any O. R. & N. Agent for more complete information, or

WM. McMURRAY
General Passenger Agent Portland, Oregon

THE AUSTIN FARM TILE
DITCHER



1. Equipped with multipedal traction, which enables it to travel over boggy or wet ground without miring.

2. Has self-cleaning buckets and a self-cleaning soil conveyor, so that sticky soil cannot cling to the bucket and load down the machine.

3. Will dig trenches from 12 to 20 inches wide, to a depth of 6 feet, at rate of from 4 to 7 lineal feet per minute, according to depth and soil conditions. Will travel from job to job by its own power at rate of two miles per hour.

4. Only one man required to operate the machine; uses three gallons of gasoline per hour.

WRITE FOR CATALOGUE NO. 325

AGENTS WANTED IN UNOCCUPIED TERRITORY

F. C. Austin Drainage Excavator Company
RAILWAY EXCHANGE, CHICAGO, ILLINOIS

Clean Laterals

An irrigation farmer in Colorado says:

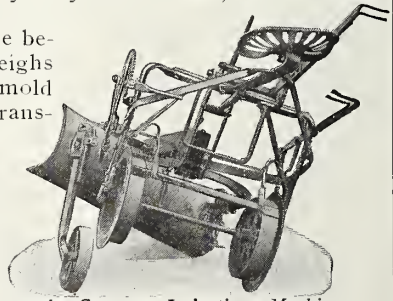
"This spring my laterals were full of thistles and trash, so we could not run the plow, as they would gather under the beam and put the plow out. As I was passing one of these ditches with the 20th Century Grader, thought we would try, but did not think we could do anything with it until we had taken the trash out. Well, once up and once back, and I had the prettiest ditch you ever saw. Took out the trash and everything and left the ditch clean."—A. J. Nordloh.

20th Century Grader

IRRIGATION MACHINE

We'll challenge you to find a machine to equal it for irrigation farmers—useful in a dozen ways the year around. Use it to grub brush first; next, level land· then ditch and make laterals; then throw dikes, grade roads—move dirt anywhere, any way. One man, four horses easily handle it.

It's almost unbreakable because made of steel. Weighs but 600 pounds. Six-foot mold board, flanged wheels. Transport it anywhere. No wonder irrigation farmers are enthusiastic over it. It's a great time and money saver—not for a **few days,** but for **twelve months.** Send for free catalogue and a fistful of testimonials.



20th Century Irrigation Machine tilted for lateral cutting or cleaning

The Baker Manufacturing Company, 742 Fisher Bldg., Chicago

PORTLAND'S ENORMOUS ADVERTISING CAMPAIGN

BY F. I. GOLLEHUR OF CHAPMAN ADVERTISING CO., PORTLAND

"WALL STREET has picked Portland, Oregon, to be a big city, Tom, and is backing up its opinion with millions!" emphatically declared Theodore B. Wilcox, head of the great flour mills there, to "Tom" Richardson, Portland's official "booster," some time ago.

Shortly afterward full pages in leading newspapers throughout the country were head-lining his very words in an advertising campaign resounding the whole length of the country.

Richardson had been so impressed with the words that he called up the Chapman Advertising Company, which was employed by Portland.

"It's a stemwinder and a crackerjack," said Chapman, when he heard the phrase. "It's the best ever. It will make everybody sit up and take notice. Let me write it down."

The next thing was to get up the ad and get the money. Chapman got busy with his art staff. "Give me a picture of a man who is the embodiment of the money power," said he. "Spread a map in front of him, showing the contour of the Columbia Valley with its one outlet, and have him jabbing his index finger at Portland."

Seven sketches were made before the conception was fulfilled on paper—one which had all the news attractiveness of a Sunday feature.

With the sketch under his arm, Richardson started out to raise the money . The agency had prepared a list of twenty-five Sunday papers, being the ones which had produced the best returns for small-space advertising placed for Pacific Northwest communities, development leagues and land companies during years of experience. The total footed up $10,000. It was hardly expected to get a third of that sum. But with the advertisement displayed, Richardson got $4,000.

It was necessary to trim the original list of twenty-five papers. The eight papers which survived the trimming did so entirely on the showing of actual returns—genuine records of results—tabulations of inquiries received during six years from hundreds of small advertisements which had appeared principally in the classified columns under the headings of "Farm Lands" and "Business Opportunities." In some cities, where more than one paper had made a good showing, as in St. Louis, where the Sunday Globe-Democrat, Post-Dispatch and Republic ran neck and neck, the choice was by the narrowest kind of margin. In Chicago, both the Tribune and the Record-Herald had "made good,' and both were used. In the Twin Cities, the pulling power of the Sunday Tribune, Journal and Pioneer-Press for years had been nearly on a par, but the Tribune had the very slight advantage that determined the choice. The eight papers used were the New York World, Chicago Record-Herald, Chicago Tribune, St. Louis Globe-Democrat, Omaha Bee, Kansas City Star, Indianapolis Star, Minneapolis Tribune.

In preparing the reading matter, Mr. Richardson, his correspondence manager, W. L. Crissey, and his publicity manager, Clarke Williams, and Mr. Chapman, collaborated. Chapman used the blue pencil, gleefully butchering copy not his own. The finished advertisement did everything that was expected of it, and besides brought an avalanche of inquiries.

Inquiries were not the purpose of the advertisement. What was wanted was publicity. The inquiries poured in, however, at about the same rate as came from small copy. In other words, the page ad pulled as many inquiries in one insertion in eight papers as normally were received in one week from 21-line copy running steadily in thirty papers where the Portland Commercial Club advertises regularly, using its little oval display, which while running, brings from 200 to 500 inquiries a week. Repeated experience in community advertising has demonstrated that for bringing inquiries small copy is as good as large, while being much less costly and really more dependable.

From small copy, the average cost of inquiries for over 130 communities, leagues and land companies whose advertising has been placed by the Chapman agency has been 21 cents. For some individual customers it has averaged as low as 7 cents. From some papers, chiefly farm journals, it has averaged as low as 2 cents.

The new campaign, for which funds are now being solicited, is planned to include magazines and farm journals as well as the leading Sunday papers. The periodicals have vindicated themselves over and over again as inquiry producers. That

Which Wagon Would You Choose

This letter from Guy L. Shaw, of Beardstown, Ill., explains these two photographs:

"Enclosed find photograph of a Davenport Steel Wagon and an ordinary wooden wagon—exactly how they looked after doing the same work, over the same roads, with the same loads."

Mud does not stick to Davenport wheels—but that's only one of the reasons why **you** should choose

The Davenport Roller-Bearing Steel Wagon

Roller bearings mean 30% to 50% lighter draft. Guaranteed to carry 5,000 pounds. Gears solid steel, trussed like a bridge. Steel wheels, strong spokes, forged into hubs and hot-riveted to tires. Nothing to shrink, rot or work loose. Oil without removing wheels. One Davenport lasts a lifetime. Don't buy any wagon till you write us. Be sure to ask for Free Package No. 22

Davenport Wagon Co., Davenport, Ia.

THE MIRACLE OF WATER

Millions of acres of raw land are being reclaimed in the West by irrigation. Water makes this desert waste the most fruitful land in the world. No magician has wrought such wonders with magic wand. Interested? Send the coupon.

The Pacific Monthly Company,
Portland, Oregon.

Enclosed find 25 cents, for which please send me three recent numbers telling about the Miracle of Water.

Name_____

BF Address_____

HARVEY BOLSTER SPRINGS

Soon save their cost. Make every wagon a spring wagon, therefore fruit, vegetables, eggs, etc., bring more money. Ask for special proposition. Harvey Spring Co., 781-17th St., Racine, Wis.

D. McDONALD

Hood River, Oregon

Headquarters for

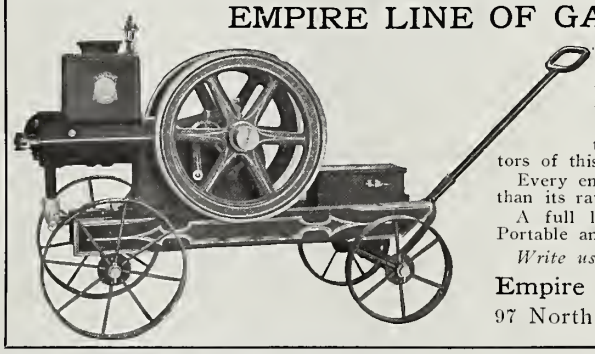
FARMING AND ORCHARD

TOOLS

Disc Harrow Extension for Orchard Cultivation a Specialty

When you want any kind of Orchard Tools come to me and get the Best

EMPIRE LINE OF GASOLINE ENGINES



The Frost King Gasoline Engine. One to fifty horsepower. Four cycle, make-and-break type, and you can use gasoline or distillate.

This engine is hopper-cooled, and the manufacturers were the originators of this system.

Every engine is guaranteed to develop more than its rated horsepower.

A full line of Stationary, Portable, Semi-Portable and Sawing Outfits.

Write us for full information and prices.

Empire Cream Separator Co., Ltd.
97 North Sixth St., Portland, Oregon

CLARKS CUTAWAY TOOLS

LESS WORK

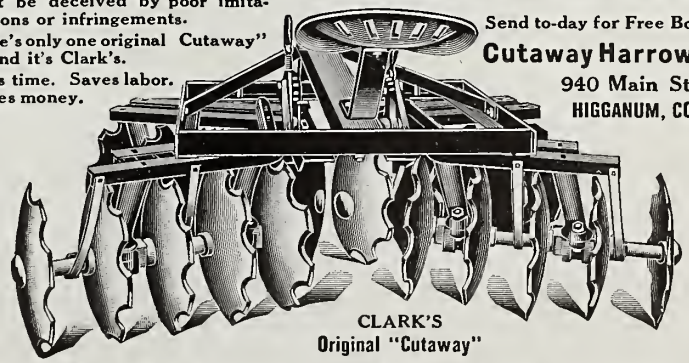
Drawn by two medium horses.
Will cut 28 by 30 acres or double-cut 15 acres in a day.
Will move 15,000 tons of earth one foot in a day.
Runs true in line of draft and keeps the surface true. All other Disk Harrows have to run in the half lap.
Has Improved reinforced main frame, and improved standards.
Don't be deceived by poor imitations or infringements.
There's only one original Cutaway" and it's Clark's.
Saves time. Saves labor. Saves money.

BIG CROPS

Crops increased 25% to 50%.
Better Grain, better Hay, better Fruit.
Takes place of Plow and Harrow.
Jointed Pole takes all the weight off the horses' necks.
We make 120 sizes and styles of Disk Tools.
Every machine fully warranted.
Thousands in use and giving satisfaction.
If your dealer won't supply you, we will.

Send to-day for Free Booklet.

Cutaway Harrow Co.
940 Main Street
HIGGANUM, CONN.



CLARK'S
Original "Cutaway"

Mitchell, Lewis & Staver Co., Western Agents, Portland, Oregon

SCOTT-MUNSELL IMPLEMENT CO.

321-329 East Morrison Street, Portland, Oregon **1018-1020 Sprague Avenue, Spokane, Washington**

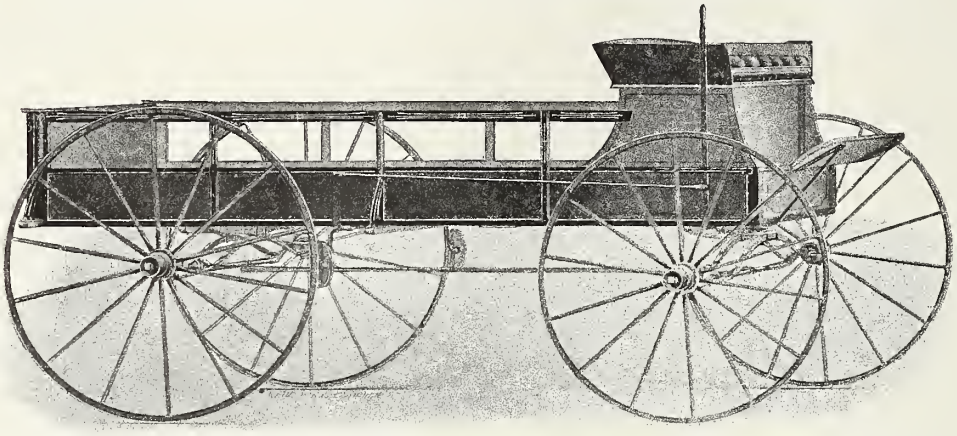
WHOLESALE AND RETAIL DEALERS IN

Vehicles and Implements

Carry large assortment of best styles of earth-working tools; also haying and harvesting machinery; also wagons for fruit delivery and for teaming; also driving vehicles for business and for pleasure uses.

WE RECOMMEND TO FRUIT GROWERS THIS WAGON NO. 120
MADE BY FREMONT CARRIAGE MANUFACTURING COMPANY

Bodies 42 inches wide. Have drop end gate with chains. Hang low on duplex springs.



Uses the celebrated "Fitch Gear" "Short Turn" with high wheels, wide body hung low.

Sizes: 1⅛-inch, 1¼-inch, 1⅜-inch and 1½-inch axles. Bodies: 7-foot, 8-foot, 9-foot, 10-foot; 42 inches wide

THE NAME OF MAKERS IS GUARANTEE OF HIGHEST QUALITY

they were not used in the initial expenditure was due to the fact that the appeal was directed to the cities, and quick action was wanted. Now that the publicity merit of large space has been demonstrated, it is propoesd to go vigorously into the standard weeklies and monthly magazines. An expenditure of $30,000 has been planned, and the new list, based partly on publicity value as well as inquiry-bringing achievements, is as follows:

Magazines—Success Magazine, Saturday Evening Post, World's Work, National Hibernian.

Farm papers—Northwestern Agriculturist, Farm and Home, Farm and Fireside, St. Paul Farmers' Dispatch, Iowa Homestead, Up-to-Date Farming, Fruit Grower (St. Joseph, Missouri), Orange Judd Farmer, St. Paul Farmer, Twentieth Century Farmer, Farm and Ranch, Hoard's Dairyman, Field and Farm, Kansas Farmer, Mail and Breeze, Oklahoma Farmer, Missouri Valley Farmer, Dakota Farmer, Indiana Farmer, The Farm Home, Register and Farmer, Toledo Weekly Blade, St. Louis Twice-a-Week Republic, Kansas City Weekly Star, Kansas City Weekly Journal, Minneapolis Farmer's Tribune, Kansas Weekly Capital.

Newspapers—Chicago Record-Herald, Chicago Tribune, Chicago Daily News, Minneapolis Tribune, Minneapolis Journal, Indianapolis Star, Indianapolis News, Kansas City Star, Kansas City Journal, Denver Post, Denver Rocky Mountain News, Buffalo Express, Duluth News-Tribune, Cincinnati Enquirer, Louisville Courier-Journal, New York World, Des Moines Capital, Omaha Bee, Cleveland Plain Dealer, Woman's National Daily, St. Louis Globe-Democrat, St. Louis Post-Dispatch, St. Louis Republic, Baltimore News, Pittsburg Dispatch, Washington, D. C., Times, Atlanta Journal, Atlanta Constitution, Los Angeles Times, Sioux City Tribune, Milwaukee Sentinel, Detroit News-Tribune, Philadelphia North American, New Orleans Times-Democrat, Boston Globe, Boston Herald, Des Moines Register and Leader, Boise Statesman, Boise News, Salt Lake Herald-Republican, Anaconda Standard, Butte Miner, Great Falls Tribune, Helena Record, Colorado Springs Gazette, Spokane Spokesman-Review, American Sunday Magazine (Hearst's), United Sunday Magazine, Associated Sunday Magazine, St. Paul Pioneer-Press.

Any one who has passed the hat for community advertising realizes that the collection of $30,000 for a one-page flash is no easy matter. But part of the money will be subscribed—probably no mean total—and then the trimming process will be applied and the gilt-edged few will get the advertising.

The regular advertising fund of the Portland Commercial Club, while amounting to over $5,000 a month, has to carry all the expense of the city's promotion work, the correspondence and press bureaus, and the organizing work done in behalf of the smaller communities of the state. Then, too, there are booklets to print. As a result, the money actually expended for paid advertising out of the regular fund is very small. It is used for inquiry-producing small-space advertisements—excepting full pages in the Pacific Monthly, Sunset Magazine and "Better Fruit," the three Pacific Coast periodicals which are doing the most effective work along development lines.—Printers' Ink.

Stanley-Smith Lumber Co.

WHOLESALE AND RETAIL

LUMBER

Lath, Shingles, Wood, Etc.

HOOD RIVER, OREGON

FRUIT Western Soft Pine. Light, strong and durable.

"Better Fruit" subscribers demand the "Better Box." **BOXES**

CAN MAKE TWO CARLOADS DAILY

WASHINGTON MILL CO.

Wholesale Manufacturers

Spokane, Washington

BOXES BOXES BOXES

APPLE AND PEAR

Stanley Smith Lumber Co.

Hood River, Oregon

FRUIT BOXES

"Larch" Apple Boxes and Strawberry Crates our specialty

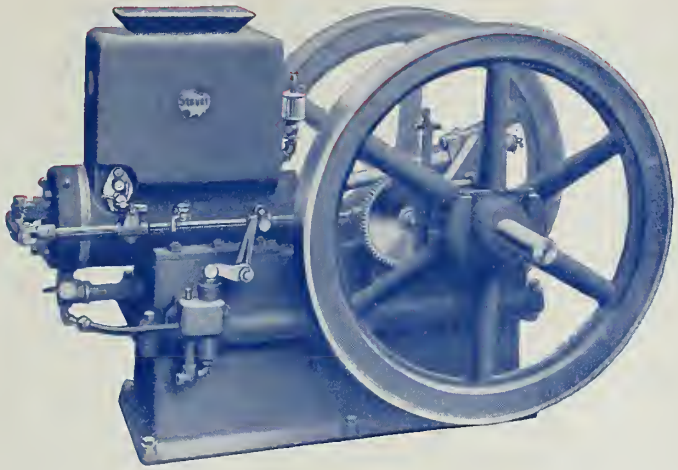
BUILDING MATERIAL

We carry a complete line. Lumber, Shingles, Lath, Plaster, Cement, Lime, Sash and Doors, Brick, Roofing, Building Paper, etc.

We solicit your patronage

Bridal Veil Lumbering Co.

Hood River, Oregon



STOVER
GASOLINE ENGINES

Now Built in "Hopper Cooled" Styles

SIZES 1, 6, 8, 10, 12, 14 AND 16 HORSEPOWER

MORE SIMPLE THAN EVER

Fruit growers and all users of portable pumping outfits will be pleased to learn that the Stover people have gotten out a very superior type of hopper cooled gasoline engine in the horizontal style. The hopper cooled engine is especially adapted to portable pumping service, it effects a saving of the room formerly occupied by a cooling tank and greatly reduces the weight of the outfit. Under ordinary conditions hopper cooled engines will never overheat. No troublesome cooling tank and leaky hose connections with this engine—nothing to cause trouble. Simple and easy to operate.

We also have Stover Water Jacketed Engines in sizes ranging from 3 to 10 horsepower in the vertical style and from 6 to 60 horsepower in the horizontal style.

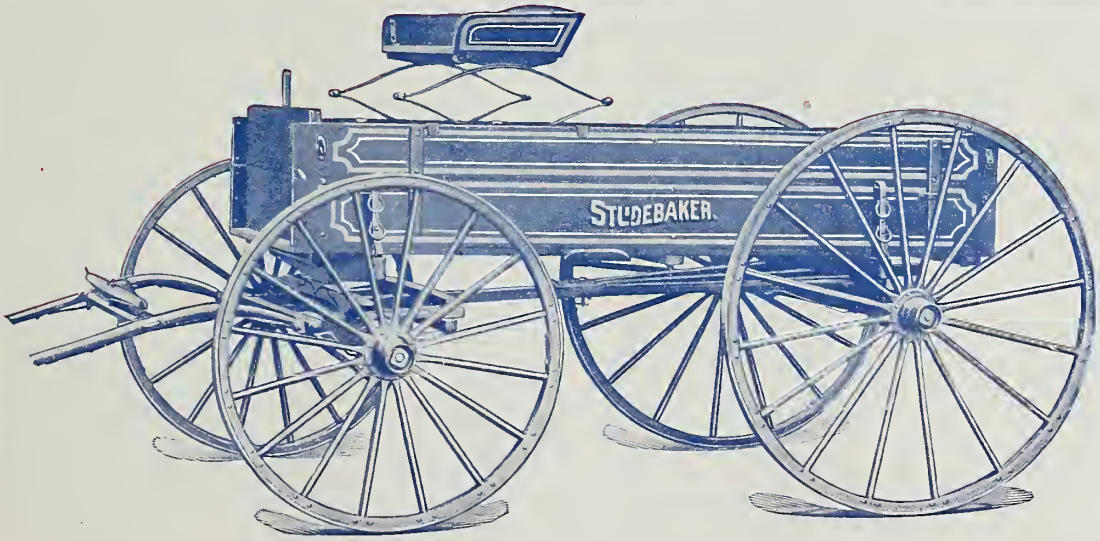
THE NORTHWEST'S LARGEST IMPLEMENT AND VEHICLE HOUSE

AGENTS EVERYWHERE

Mitchell Lewis & Stayer Co.

PORTLAND OREGON

Spokane, Washington
Boise, Idaho
Salem, Oregon



Studebaker one-horse wagons---the best wagon on earth. Prices on these wagons reduced January 1, 1910. Don't *buy* until you get the NEW PRICE on a Studebaker.

Studebaker vehicles cost no more than others. We want you to have our catalogue---a postal card will bring it to you together with the name of the nearest agent.

Agencies at Hood River, The Dalles, Medford, Ashland, Grants Pass, Wenatchee, North Yakima, and two hundred other points in Oregon and Washington

STUDEBAKER BROS. CO. 330-336 East Morrison Street, PORTLAND, OREGON
Wagons, Buggies, Harness, Automobiles

$2375 AN ACRE IS PAID FOR BEARING ORCHARD; $428 FOR UNPLANTED LAND

SALES THIS WEEK TOTAL $500,000 | **12 ACRES PEARS SELL FOR $28,500** | **280 ACRES SOLD FOR $120,000**

When we read news head-lines like the above, and hear so much about Eastern capitalists buying large Oregon orchards at prices away up in the thousands, and getting net returns of 25 to 45 per cent a year, the transactions carry with them the idea that fruit growing in this state is a rich man's game. It is, but it is also the poor man's road to fortune.

It is doubtful if any other industry in the state has yielded such returns as have come from Oregon's fruit crop.

In certain sections of the state the **development** has placed the price of land beyond the reach of the man of average means.

Why not take the same quality of soil in the same delightful climate and **share in the profits of development?** You pay us for the land—not the name, fame or reputation.

LINNHAVEN

PERFECT SOIL PERFECT FRUIT PERFECT CLIMATE

In the Cascade foothills of the Willamette Valley, at an elevation of 700 feet, in the forks of the famous Santiam River.

The soil varies from a mild, ashen-gray clay to a rich, deep, red clay loam, and produces unusually fine apples. There is no alkali, no acidity, no sterility, and irrigation is not necessary.

Eighty miles from Portland, sixteen miles from Albany, three miles from a station on the Southern Pacific Railroad. Away from the crowded city, but within reach of its advantages—a country home without the drudgery of the old farm life.

This beautiful body of land, comprising the entire holdings of the Linnhaven Orchard Company, has been subdivided into ten-acre tracts and put upon the market July 1. It is composed of old ranches and homesteads that have been cultivated for years, the old family orchards have been producing excellent fruit, and the soil has already demonstrated its ability to "deliver the goods."

$500.00 secures ten acres of this fine fruit land. This is the cash payment required, and the balance of $2,500.00 can be paid in monthly, semi-annual or annual payments through a period of five years, and during all that time the land and trees will be cared for in a thorough and scientific manner by competent orchardists. Thus for the small sum of $300.00 per acre, on easy payments, you can secure ten acres of five-year-old trees that will be worth from $500.00 to $1,000.00 per acre by the time you get them paid for.

If you wish to engage in the most profitable and pleasant of all outdoor occupations, that of the fruit grower, invest in LINNHAVEN.

The population of Oregon is increasing every day, but the **acreage** is not. Get a home while you can; make an investment at the time it is the most profitable.

Make remittance with order, investigate any time within six months, and, if not found as represented, your money will be refunded.

WRITE TO

THE OREGON TITLE AND TRUST COMPANY

ALBANY, OREGON